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ABSTRACT

This instructor's guide contains the materials required to teach a competency-based introductory course in drywalling to students who have chosen to explore careers in construction. It contains three units: drywall materials, drywall tools, and applied skills. Each instructional unit includes some or all of the basic components of a unit of instruction: performance objectives, suggested activities for the instructor, extensions and options, information sheets, student supplements, transparency masters, instructional supplements, assignment sheets, job sheets, practical tests, written tests, and answers to assignment sheets and written tests. Academic skills training is combined with vocational training throughout the instructional materials, and a system of icons has been used to help instructors identify activities into which training in the following basic skill areas has been infused: reading, science, creative thinking/problem solving, writing, oral communication, employability, math, interpersonal skills, and social studies. Most units of instruction are designed for use in more than one lesson or class period of instruction. These materials precede the instructional units: information on basic skills in curriculum, information on measuring student performance gains, and required criteria for a competency-based education program. A basic skills documentation matrix and competency profile are provided. (YLB)

ED 385 686

introduction to construction series

introduction to drywall

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instructor edition

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Introduction To Drywall

Developed as a Cooperative Project by
the Associated General Contractors of America
William W. Brown, Chairman, Manpower and Training Committee
and
Curriculum and Instructional Materials Center,
Oklahoma Department of Vocational and Technical Education

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Introduction To Drywall

TABLE OF CONTENTS

Volume A - Introduction To Drywall

Unit 1 - Drywall Materials

Unit 2 - Drywall Tools

Unit 3 - Applied Skills

FOREWORD

In 1985, The Associated General Contractors of America (AGC) met with representatives of the Oklahoma Curriculum and Instructional Materials Center (CIMC) to discuss the possibilities of developing, as a cooperative project a course of instruction designed for training individuals who choose to seriously explore careers in consrtuction.

This revised publication is the result of those original discussions and updates made through close coordination among general contractors and vocational educators. This series represents conscious effort to coordinate the practical experience of personnel in the construction industry with the best instructional methods of those in the field of vocational education.

Although this book reflects a systematic approach to instructional materials development and the latest in educational technology innovations, the information in the Introduction To Drywall manual should be adapted and modified to coincide with local conditions.

Roy Peters, Jr.
State Director
Oklahoma Department of Vocational
and Technical Education

William. W. Brown, Chairman
Manpower and Training Committee
The Associated General Contractors
of America

PREFACE

Construction requires that students have many skills and related information to become productive workers in this challenging field. Workers must be better trained and equipped to find and retain meaningful employment.

Instructional materials in this manual is written in terms of student performance, using measurable behavioral learning process. Criterion-referenced evaluation instrument provide for a uniform measurement of student progress.

The purpose of this manual is to assist instructors in all construction related areas in providing instruction throughout the industry. Any information in this manual that does not concur with the instructor's course of study should be modified to meet personal needs.

Personnel safety is of prime concern, as an instructor you are encouraged to closely observe and couch students in all safety issues. We have done much to advise students of possible dangers, but your close supervision and alertness can't be overemphasized.

Al Willey
Curriculum and Instructional
Materials Center
Oklahoma Department of Vocational
and Technical Education

ACKNOWLEDGEMENTS

Much appreciation is expressed to the many individuals who contributed their time, talents, and knowledge in the revision of this manual.

Thank you to the following ad hoc committee members, AGC staff representatives, and the staff of the Oklahoma Department of Vocational and Technical Education.

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USE OF THIS PUBLICATION
INSTRUCTIONAL UNIT

Introduction to Drywall contains three units. Each instructional unit includes some or all of the basic components of a unit of instruction: performance objectives, suggested activities for the instructor, extensions and options, information sheets, students supplements, transparency masters, instructional supplements, assignment sheets, job sheets, practical tests, written test, and answers to assignment sheets and written test, all of which are included in the instructor's edition. The student workbook includes the objective sheets, information sheets, student supplements, transparency masters, assignment sheets, and job sheets. Written tests may be duplicated for classroom use or *additional copies* may be purchased by calling 1-800-654-4502 or, in Oklahoma, 1-800-522-5810, ext. 589.

All of the unit components tie into measurable and observable learning outcomes. Instructors are encouraged to supplement these components with other resources in order to make them as responsive to local conditions and individual needs as possible.

Most units of instruction are designed for use in more than one lesson or class period of instruction. Careful study of each unit of instruction by the instructor will help him or her determine the following:

- Amount of material that can be covered in each class period.
- Skills that must be demonstrated.
  - Supplies and equipment needed
  - Amount of class time needed for demonstrations
  - Amount of time needed for student practice
- Supplementary materials, including print and non-print media, that must be ordered.
- Resource people who must be contacted.

Objective Sheet (White Pages)

Each unit of instruction is based on the performance needed for successful employment in an occupational area. Performance objectives are stated in two forms. The unit objectives states the overall goal of the unit. It tells what the student should be able to do and what standard will be used to see whether the student can do it. Specific objectives outline the teaching sequence of the competencies required to meet the unit objective.

The objectives should be provided for students and stressed throughout the teaching/learning process. This will help answer any questions concerning performance requirements for each instructional unit. The objectives can also help determine teaching strategies and instructional methods. Instructors should prepare for each unit by deciding how each objective could be best taught.

Instructors should feel free to modify, delete, or add objectives in order to meet the needs of the students and community. When objectives are added, the instructor should remember to supply the needed information, assignment and/or job sheets, and criterion-referenced test items.

Suggested Activities (Pink Pages) – **Instructor's Edition only**

The suggested activities page assists the instructor during the preparation stage of the teaching/learning process by providing suggestions for delivery, application, and evaluation during the instructional process. The instructor should read the suggested activities prior to introducing the unit to allow time to obtain supplemental materials, prepare audiovisual materials, and contact outside resources. Duties of the instructor will vary according to the particular unit.

References used in the development of each unit are listed in the "Suggested Resources" section, along with print and non-print media that may be used to teach the unit. These materials can be used by the instructor to supplement his or her knowledge of the subject area or to help students with particular interests or occupational objectives in the area covered.

Extensions and Options (White Pages) – **Instructor's Edition only**

Extensions and Options are supplemental material that is not testable or graded and is nice-to-know. Extensions and Options provide the instructor with additional activities, fact sheets, art, controversial items, and extra practice sheets. They may also include items for the gifted or remedial student. Extensions and Options are used at the discretion of the instructor.

Information Sheets (Green Pages)

The information sheet provides "must know" content essential for meeting the cognitive objectives stated at the beginning of each unit. It serves as an excellent guide for presenting background knowledge necessary to develop the skills specified in the unit objective.

Students should read the information sheet before it is discussed in class. Space is provided in margins for students and instructors to add notes that clarify and/or expand on the information provided.

The information sheet may include notes, cautions, or warnings. These should be discussed carefully and thoroughly. **Notes** are short verbal additions to the information sheet or procedural outline that provide nice-to-know and decision-making information. A note may tell the student what to watch for or to consider at a given step. It may explain when a step may not be applicable. Notes offer guidance that may help the student understand the process and do it more efficiently. **Cautions** are advisories that tell the student how to avoid causing minor personal injury or equipment damage. **Warnings** are advisories to the student used to avoid serious personal injury or death to the student, persons in the workplace, or users of the project or the procedure.

Student Supplement (Green Pages)

Student supplements include instructions that could be used for solving problems or reinforcing the enrichment of learning. The information presented in a student supplement may consist of tables, charts, written information, forms, or other information students will need in order to complete one or more of the assignment or job sheets. While supplements are not tested over directly, they may be used to assist in meeting the performance objectives.

Transparency Masters (White Pages) - **Instructor's Edition only**

Transparency masters provide information in a special way. The students may see as well as hear the materials being presented, thus reinforcing the learning process. Transparencies may present new information or they may reinforce information presented in the information or assignment sheets.

Transparencies should be made and placed in the notebook where they will be immediately available for use. Transparencies direct the class's attention to the topic of discussion. They should be left on the screen only when topics shown are under discussion.

Instructional Supplements (Pink Pages) — **Instructor's Edition only**

Instructional Supplements provide suggestions for teaching the basic skills included in each assignment sheet or job sheet. They are located directly in front of the components they support—assignment or job sheets—in each unit.

Assignment Sheets (Tan Pages)

Assignment sheets provide students with information and exercises that address learning levels at or above the application level of Bloom's taxonomy. Assignment sheets provide written exercises for instruction and practice of a specific objective. The introduction to the assignment sheet explains how the assignment sheet relates to the subject area and unit component for such information.

Assignment Sheet Answers (Pink Pages) – **Instructor's Edition only**

This component is designed to assist the instructor in evaluating student performance on assignment sheets.

Job Sheet (Blue Pages)

Job Sheets are another important segment of a unit of instruction. The job sheets provide a list of equipment, tools, and materials needed to complete a manipulative or psychomotor skill. They describe a step-by-step procedure to complete each task or job. Diagrams, photographs, and illustration are provided to assist students in achieving the skill.

The instructor should demonstrate the procedure outlined in each job sheet. Furthermore, the instructor needs to localize the procedure according to the equipment and supplies available in the local lab or salon situation. Job sheets also furnish potential employers with a picture of the skills being taught and the performances they might reasonably expect from a person who has had this vocational instruction.

Practical Tests (Yellow Pages) – **Instructor's Edition only**

The practical tests are designed to assist the instructor in the evaluation of the psychomotor activities (job sheets). The practical test provides instructors with a valid mechanism for determining a student's level of ability in performing the procedure stated on the job sheet. The check-off list allows instructors to evaluate a student's process performance of the task on the job sheet. The overall competency indicator allows the instructor to evaluate the end product.

Written Test (Yellow Pages) – **Instructor's Edition only**

This component provides criterion-referenced evaluation of every objective listed in the unit of instruction. If objectives have been added, deleted, or modified, appropriate changes should be made on the test.

In order to measure and document student competency gains as required by the latest Carl Perkins regulations, and as outlined in the Oklahoma-developed system of standards and measures, it is *absolutely essential* that the same test be used as a pretest and as a posttest. If you choose to use tests other than the ones included herein, be sure that the same instrument is used for each activity–pre- and post test.

A detailed explanation of the Oklahoma plan for standards and measures and the Carl Perkins requirements is included in the CIMC publication, *Measuring Learning & Competency Gain: The Pretest/Posttest Approach.* This booklet and accompanying software designed to assist in calculating and recording student gains are available to all vocational teachers through the school's vocational testing liaison.

To further assist vocational teachers, the CIMC is in the process of developing test code sheets for each written test in its more recent publications, including this one. These code sheets are explained in Section 8 of the publication mentioned above, and will greatly assist in verifying that the test is a valid instrument for measuring student learning and competency gains. As the test code sheets for programs become available, they will be forwarded to teachers of each program; further publications will include the test code sheets.

Written Test Answers (Pink Pages) – **Instructor's Edition only**

This component is designed to assist the instructor in evaluating student performance on written tests.

COMPETENCY PROFILES

A competency profile is included a the front of this publication. Competency profiles document student performance. The profile contains a list of the specific job competencies that a student should achieve before leaving the training program.

PAGE NUMBERING

Each publication for the Curriculum and Instructional Materials Center is usually assigned a specific abbreviation. ***Introduction to Drywall*** has not been abbreviated. Each unit will be recognized by the unit number in Arabic numerals. Each unit in the publication begins with page 1. Each page number gives the component name, book title, unit number, and page number within the unit. Since some CIMC publications are loose-leaf, this system of page numbering was recently adopted so that pages from different manuals would not get mixed up. The page number for the objective sheet in Introduction to Drywall, which is unit 2, would look like this:

OBJECTIVE SHEET - **Introduction to Drywall**
CIMC - A2 - 1

METHODS OF DISSEMINATING MATERIAL

For best results, provide student materials for each student. Student workbooks contain objective sheets, information sheets, supplements, transparency masters, assignment sheets, and job sheets. Pretest, practical tests, and written tests are packaged separately for students, and can be stored until needed. Students should be allowed to take their materials home at the end of the course.

TEACHING METHODS

Keeping students motivated is a challenge. Supplement the objectives by providing the "why," personal experiences, and current information. If you are going to teach the material in a group setting, prepare for the unit be deciding the best way to teach each objective and allow for student input.

If you are going to follow the plan for individualized instruction, provide opportunities that will allow each student to become involved in planning for and being responsible for his or her own education.

CORRECTIONS AND SUGGESTIONS

The Curriculum and Instructional Materials Center (CIMC) wants to provide vocational instructors and students with materials that are accurate and effective. Although the CIMC strives to maintain the highest standards of development and production, oversights occasionally do occur. If you find any errors in this or other CIMC publications, or have suggestions for improving their usefulness in vocational programs, please notify the CIMC staff. One easy way of pointing out errors is to make a photocopy of the affected page and to indicate the correction on the copy. Mail this information to the CIMC, where it will be used to correct the publication before the materials are reprinted.

To ensure that the material is updated on a timely basis, notify the CIMC of necessary corrections as soon as possible after discovering the error. Do not assume that someone else will notice the error and inform the CIMC; other users may be making the same assumption. Please send corrections and recommendations for improving this publication to the following address:

Coordinator of Development
Curriculum and Instructional Materials Center
Oklahoma Department of Vocational and
Technical Education
1500 West Seventh Avenue
Stillwater, Oklahoma 74074-4364

For a free catalog, a list of new publications, or other instructional materials information call 1-800-522-5810, extension 589.

RESALE

BASIC SKILLS IN CURRICULUM

The CIMC has always been mindful of the importance of reinforcement (and sometimes remediation) of students' academic skills as they progress through vocational training, and has always included activities in its materials to enhance and promote use of these skills.

Recent state and federal legislation mandates vigorous basic skills development in vocational education in the wake of demands by industry that workers *must* be academically, as well as technically, competent, given the nature of the highly complex work place. In response, the CIMC has taken the following steps to document that, indeed, the instructional materials *do* combine academic skills training with the vocational training. In addition, concerted efforts have been made to "beef up," or enhance the basic skills instruction already present. Following is a brief description of those processes:

Basic Skills Icons and Enablers

To assist teachers and students in identifying activities that promote basic skills development, the CIMC has implemented a marking system that uses simple graphic symbols, or icons, and a list of specific tasks, or enablers, to identify the basic skill or skills that are called for in each job or assignment sheet.

Each of the nine broad skills areas—reading, writing, mathematics, science, oral communication, interpersonal or relating, creative thinking and problem solving, employability, and social studies—is represented by the icon presented below.

Reading

Science

Creative Thinking/ Problem Solving

Writing

Oral Communication

Employability

Math

Interpersonal or Relating

Social Studies

When an activity involving one of these basic skills is identified, the corresponding icon is placed in the left-hand margin of the job or assignment sheet. The basic skills training is further defined by retrieving the specific, or enabling, skill that is required by consulting a list of over two hundred and fifty enablers that has been compiled and grouped with each general basic skill. This enabling skill is placed directly below the icon.

As an example, an exercise that requires a student to conduct library research would make necessary the use of specific reading comprehension and research and reference skills. The basic skills that the exercise promotes would be depicted in the left-hand margin as follows:

ASSIGNMENT SHEET	*PLANNING LIVING SPACE FOR HUMAN NEEDS*	**1**

Name _____ Score _____

OBJECTIVE 10 **Define personal territory.**

INSTRUCTIONS

Reading Comprehension
- Gain factual information

Functional Reading
- Follow written instructions
- Use content area vocabulary

Language
- Use standard grammar, spelling, and capitalization
- State ideas clearly

- As discussed in Objective 1, each person has an invisible "space bubble" or comfort zone. A comfort zone is the space between oneself and others that brings a feeling of well-being. When one's comfort zone is crowded or invaded, discomfort often results. Therefore, personal territory needs should be a prime consideration when planning living space.
- For each of the following situations, draw your estimated comfort zone around the figures provided.
- Indicate how many inches from your body the comfort zone extends.
- Consider how that comfort zone changes in different situations. Answer the questions that follow.

Basic Skills Documentation Matrix

Another component of the CIMC basic skills instructional plan is the "Basic Skills Documentation Matrix." The matrix graphically summarizes the basic skills training included in the vocational program, unit by unit. It should be helpful to teachers in planning their instruction, and to administrators as documentation that basic skills **are** being addressed during the vocational training.

The matrix for this publication is included as an 8½" by 11" foldout in this *Instructor's Manual.*

Matrices have been developed for most CIMC publications. For more information on those available for other programs, call the CIMC at 1-800-654-4502.

Instructional Supplement

The supplement is a tool for the instructor to use in helping students apply the basic skills in Assignment Sheets and Job Sheets. Some supplements are appropriate for use with all students; some are for use only with those students who do not understand the academic skills called for in the exercise.

MEASURING STUDENT PERFORMANCE GAINS

When you examine this book, you will notice that separate written pretests are no longer included in the units of instruction. Each CIMC unit now contains only a single Written Test. This test should be used as **both** pretest and posttest by giving it once before students start a unit and again when they have completed the unit.

The reason for using a single instrument as both pretest and posttest is so that direct comparison of each student's competencies before and after instruction can be made accurately. This comparison enables precise calculation, documentation, and evaluation of student **performance gains**.

Accurate performance gains analysis is an important requirement of the new Carl Perkins legislation for vocational education. Teachers can make an important contribution to the performance accountability mandated by the new federal legislation by carrying out accurate performance gains analysis for their students, and making this data available to students, parents, and administrators.

This analysis is easy to do and requires only simple calculations and record keeping. Detailed information regarding performance gains analysis is contained in the CIMC publication, *Measuring Learning & Competency Gains: The Pretest/Posttest Approach.* In addition, the CIMC has developed a computer program, CARL, which will perform all necessary calculations and will print out a record form of all information required for gain score analysis. Copies of CARL and the publication are available through your local testing liaison (in Oklahoma), or from the CIMC at 1-800-654-4502.

REQUIRED CRITERIA FOR A COMPETENCY-BASED EDUCATION PROGRAM

Criterion	Discussion	CIMC component meeting criterion
1. Instruction is based on clearly-stated learning objectives that are: a) observable and measurable, and b) communicated in writing to students before instruction begins.	Learning objectives drive CBE. Objectives are the "competencies" that learners must achieve. Each objective must clearly state what *learners* must *do* to demonstrate acquired skill or knowledge. Verbs in learning objectives are active and precise, stating the exact performance expected of learners. The objectives should also specify the standard or level of performance required. Objectives can be at any level of Bloom's Taxonomy and can include the cognitive, psychomotor, and affective domains. Higher-order cognitive skills should be included.	Objective Sheet
2. Instruction is aligned with the stated learning objectives	In CBE, the objectives specify what is taught. "Content" should relate to one or more objectives. The curriculum should cover all objectives with relevant information.	Information Sheet
3. There is a student evaluation system that is: a) criterion-referenced, and b) aligned to the learning objectives and the curriculum.	In CBE, the aim is to bring the performance of *all* learners up to a pre-defined standards and competencies. Learners work on each competency until they achieve "mastery"; the evaluation system should test and record this mastery. Learners can restudy and retest as often as needed. Specific remediation activities should also be available to learners when needed. The evaluation system focuses on what each student has achieved, not on what the instructor has "taught." The "constant" in CBE is student performance; the "variables" are time and resources. (This differs from traditional systems where learners get one chance at mastery; some succeed and some fail. In such systems, time and resources are constant and student achievement is variable.) If an evaluation is criterion-referenced, successful learner performance is defined by (or *referenced* to) mastery of pre-set objectives and standards (or *criteria*); there must be a careful match (or *alignment*) between what the student should master (objectives), what is taught (curriculum), and what is tested. Objectives, curriculum, and evaluation system must all match.	Written Test and Job Sheet/Skill Test

Criterion	Discussion	CIMC component meeting criterion
4. There is an observable management system of cognitive skill practice that provides for, promotes, and documents mastery learning.	For both cognitive and psychomotor skills, a CBE program must have a system of maintaining records of which skills and activities each learner has completed, which ones are in progress, and which ones have not yet been completed. Completion means "mastery"; no skill is completed until the learner has achieved the mastery level. The record system should promote feedback on student skill attainment to *both* instructor and learners, provide for remediation as needed, and encourage reevaluation of learner performance until mastery is achieved. Appropriate remediation strategies often should consider learning styles and other individual differences among learners. Learners should work on skills and activities until they achieve mastery. They should not be "passed on" without mastery. While learners may move ahead and work on other skills (i.e those for which all prerequisite skills have been mastered or those without prerequisites), work should also continue on the skills still requiring mastery. Students should not attempt higher-order skills until all prerequisite skills are mastered.	Assignment Sheet
5. There is an observable management system of psychomotor skill practice that provides for, promotes, and documents mastery learning.		Job Sheet/Skill Test
6. Skill mastery records are maintained for each learner, and learners have access to and make use of these records to monitor their skill acquisition.	Records should clearly indicate the skills each learner has mastered. One such record should profile or list the competencies that have been mastered and those to be mastered. Other performance indicators can be added and kept in a portfolio for each learner. Learners should have ready access to their portfolios to monitor their own progress in skill mastery and competency attainment.	Competency Profile

CORRECTIONS AND SUGGESTIONS

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This information will be used to correct the publication before the materials are reprinted. To ensure that the material is updated on a timely basis, notify the CIMC of necessary corrections as soon as possible after discovering the error.

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26

OBJECTIVE SHEET	DRYWALL MATERIAL	A 1

INTRODUCTION

This unit provides the student with a study in the use of drywall materials. Practical application is provided through an assignment sheet to practice estimating drywall material.

PREREQUISITE

Fundamentals of Construction

UNIT OBJECTIVE

After completing this unit, the student will be able to identify drywall and estimate drywall materials. The student will show this knowledge by completing the assignment sheet and written test with a minimum score of 85 percent.

SPECIFIC OBJECTIVE

After completing this unit, the student will be able to:

1. Given a list of terms associated with drywall materials, match them to their correct definitions.
2. Given a description, select the types of drywall.
3. Select from a list standard sizes of drywall.
4. Given alternatives, choose benefits of using drywall.
5. Given a drawing, identify hardware and fasteners used with drywall.
6. Estimate materials needed to drywall a structure. (Assignment Sheet 1)

SUGGESTED ACTIVITIES	DRYWALL MATERIAL	A 1

PREPARATION

- Review unit and plan presentation.
- Order or obtain materials needed to supplement unit:
  - — Samples of the various types of drywall
  - — Literature from drywall manufacturers
  - — Samples of hardware and fasteners used with drywall
- Introduce unit.
- Provide the class with representative costs for installing 100 square feet of plaster as compared to 100 square feet of drywall; also compare time requirements for the two jobs.
- Have a former student who works primarily as a drywall installer talk to the class about his or her job and training.

Objective 1: Given a list of terms associated with drywall materials, match them to their correct definitions.

- Discuss terms and definitions associated with drywall.
- Show the class samples of materials when possible.
- Show the class a cut-away wall section display with the drywall at various stages of installation to illustrate terms.

Objective 2: Given a description, select the types of drywall.

- Discuss types of drywall.
- Invite a representative from a drywall manufacturer or distributor to discuss the various types of drywall.
- Provide students with samples of each type of drywall discussed in this section of the Information Sheet.

- Take the class to visit a drywall manufacturing plant.

Objective 3: Select from a list standard sizes of drywall.

- Discuss standard sizes of drywall.
- Discuss reasons for and applications of the various sizes of drywall.
- Have students survey local distributors to determine what sizes of drywall are normally available and which sizes must be special ordered.
- Take the class to visit construction sites where a variety of drywall sizes and types of drywall are being used.

Objective 4: Given alternatives, choose benefits of using drywall.

- Discuss benefits of using drywall.
- Demonstrate benefits, ease of repair, noncombustibility, etc.
- Provide students with manufacturer's or association literature describing the benefits of drywall.
- Have a professional drywall installer discuss the limitations and restrictions of using drywall.

Objective 5: Given a drawing, identify hardware and fasteners used with drywall.

- Discuss hardware and fasteners used with drywall.
- Display samples of each type of hardware and fastener illustrated in this section of the Information Sheet.
- Demonstrate the use of each type of hardware or fastener or invite drywall installers to demonstrate the use of each type, emphasizing hardware and fasteners commonly used in your area.

Objective 6: Estimate material needed to drywall a structure. (Assignment Sheet 1)

- Discuss the procedure to estimate materials needed to drywall a structure. Show transparency 1 as an aid during discussion.
- Discuss Assignment Sheet 1.
- Have students complete Assignment Sheet 1.

EVALUATION

Pretest

- Give written test as pretest.
- Determine individual study requirements from pretest results.
- Counsel students individually on pretest results and study requirements.
- Modify materials in unit or create supplementary materials for individual students as required.

Skill Test

- Evaluate students on assignment sheet activities.
- Complete appropriate section of competency profiles.
- Reteach and reevaluate if necessary.
- Modify materials in unit or create supplementary materials for individual students as required.

Written Test

- Explain to students that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give the written test.

  NOTE: The written test may be given in sections if desired.

- Complete appropriate sections of competency profiles.
- Reteach and retest if necessary.
- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

SUGGESTED RESOURCES

Print Media

- *Bon Tool Company Catalog.* Bon Tool Company: 4430 Gibsonia Rd., Gibsonia, PA 15044-9986. Phone (412) 443-7080.
- *Goldblatt Tool Company Catalog.* Goldblatt Tool Company: 511 Osage, P.O. Box 2334, Kansas City, KS 66110. Phone (913) 621-3010.
- *Gypsum Construction Handbook.* United States Gypsum Company: 101 south Wacker Drive, Chicago, IL 60606-4385.
- *Modern Carpentry.* The Goodheart-Willcox Company, Inc.: South Holland, IL.

UNIT REFERENCES

- Georgia-Pacific Corporation: Atlanta, GA.
- *Goldblatt Tool Company Catalog.* Goldblatt Tool Company: Kansas City, KS.
- Toenjes, Leonard P. *Building Trades Dictionary.* American Technical Publishers, Inc.: Homewood, IL.
- United States Gypsum Company. Subsidiary of USG Corporation: Chicago, IL.
- Wagner, Willis H. *Modern Carpentry.* Goodheart-Willcox Company, Inc.: South Holland, IL.
- Willey, Al. *Commercial Carpentry.* Stillwater, OK: Oklahoma Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America. 1993.

INFORMATION SHEET	DRYWALL MATERIAL	A 1

OBJECTIVE 1

Given a list of terms associated with drywall materials, match them to their correct definitions.

- **backing** — wood nailed between structural members to provide a solid base for nailing drywall
- **bedding** — process of filling the joints with joint compound
- **dimple** — impression on drywall surface formed by a nail or screw driven to proper depths
- **double nailing** — pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists and studs

  NOTE: Double nailing is used to keep drywall from popping loose as structure settles.
- **drywall** — rigid sheathing material made with a non-combustible core (usually gypsum) that is surfaced with treated paper or some other sheet material; sheathing material applied to interior finish walls and ceilings
- **featheredge** — to spread joint compound or topping so that it tapers to a very thin layer
- **gypsum** — a mineral used in construction materials to retard the spread of fires
- **joint** — place where edges of two pieces of drywall meet
- **joint compound** — material used to embed perforated tape to drywall joint, to finish over hardware, and to finish over nail and screw heads
- **laminate** — to bond together by uniting two or more layers of material

- **perforated tape** — thin paper material used with joint compound to help cover and reinforce joints in drywall construction

- **quick-weld compound** — material specially blended to set in from 20 to 90 minutes; used almost exclusively in constructing manufactured housing

- **topping** — finish coat of compound that covers all previous coats

- **screw gun** — a power tool with interchangeable tips for turning screws

OBJECTIVE 2 **Given a description, select the types of drywall.**

- Standard

  NOTE: Standard drywall is the most commonly used drywall

- Type "X"

  NOTE: Type "X" drywall has a denser core than the regular type and a higher fire rating.

- Insulating

  NOTE: Insulating drywall, as the name implies, has insulation mixed into the core

- Backing board

  NOTE: Backing-board drywall does not have a finished surface; therefore it is used where it will be covered with a finished material

- Fire code (rated)

- Waterproof (water resistant)

  NOTE: This drywall resists moisture and is recognized by its green or blue paper color; it is used in bathrooms and other interior areas that are exposed to moisture

- Drywall sheathing — a paraffin coating applied to the drywall surface to improve water resistance

- Pre-finished

  NOTE: Pre-finished drywall is available in a variety of surface materials, designs, and patterns; it is usually installed vertically because of the difficulty in matching and finishing the butt joints.

OBJECTIVE 3 **Select from a list, standard sizes of drywall.**

NOTE: Drywall can be special ordered to specific sizes. Being able to buy drywall in different sizes reduces building cost substantially.

- Standard thickness

  NOTE: The ½-inch and ⅝-inch thicknesses are the most commonly used sizes.

  — ¼ inch

  — ⅜ inch

  — ½ inch

  — ⅝ inch

  — 1 inch (often called coreboard)

- Standard width — 4 feet

  NOTE: All drywall comes in 4-foot widths.

- Standard lengths
  - — 8 feet
  - — 10 feet
  - — 12 feet

OBJECTIVE 4 **Given alternatives, choose benefits of using drywall.**

- Easily applied
- Economical
- Easily maintained
- Easily repaired
- Noncombustible
- Provides a good base for applying finish materials

OBJECTIVE 5 **Given a drawing, identify hardware and fasteners used with drywall.**

- **HARDWARE**
  - — Metal corner bead

FIGURE 1

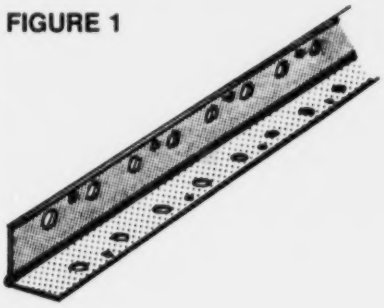


FIGURE 2

— Metal casing bead

FIGURE 3

"J" Bead

FIGURE 4

"L" Bead

— Perforated-tape corner

FIGURE 5

Perforated tape on roll

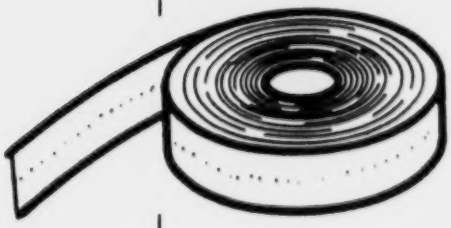
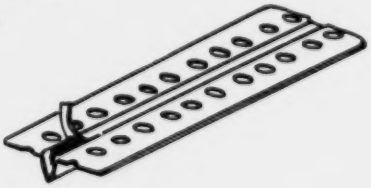


FIGURE 6

Flex-tape shaped into a corner

— Expansion joint

FIGURE 7

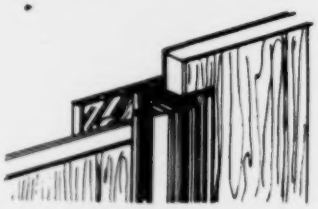


— Molding for pre-finished drywall

NOTE: Molding generally matches the colors or patterns used in the finished drywall, which is applied to the wall with adhesive.

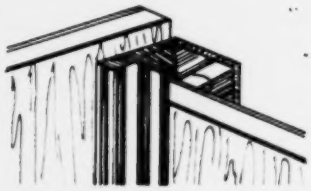
- Divider

FIGURE 8



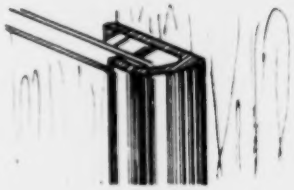
- Inside corner

FIGURE 9



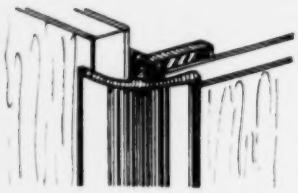
- End cap

FIGURE 10



- Outside corner

FIGURE 11



- **FASTENERS**

NOTE: Drywall nails and screws may be purchased in a variety of sizes and lengths. The type of fastener will be specified in the building plan.

— Coated nail

FIGURE 12

— Annular-ring nail

FIGURE 13

– Drywall screw (Bugle-head)

FIGURE 14

OBJECTIVE 6

Estimate materials needed to drywall a structure. (Assignment Sheet 1)

NOTE: Drywall is estimated in square feet.

1. Determine total square footage to be covered with drywall.

   a. Check plans and compute square footage of wall and ceiling space in structure. Ignore openings such as doors and windows.

   b. Square footage =

      total perimeter of walls × wall height + the ceiling width × ceiling length.

EXAMPLE: For a 12′ × 16′ room with a wall height of 8′, the square footage is:

Wall perimeter	Wall height		Ceiling width		Ceiling length
(12′ × 2 walls) +(16′ × 2 walls)	× 8′	+	12′	×	16′
(24′ × 32′)	× 8′	+		192′	
448′		+	192′ = 640 sq. ft.		

2. Determine number of sheets of each size of drywall needed.

   a. Compute number of 4′ × 8′ sheets needed.

      1) Multiply the total surface area (sq. ft.) × factor = number of drywall panels required. The "factor" is .03125 for 4 × 8 drywall panels.

      EXAMPLE: Using our previous specifications:

      640 sq. ft. × .03125 = 20 panels

      NOTE: Another method is to divide the total square feet by 32 (8 ft. sheets) or 40 (10 ft. sheets).

3. Determine amount of fastening and finishing materials needed.

   a. Use Table 1 to find the amount of nails, screws, joint compound tape, and texture paint needed per 1,000 square feet of drywall.

      NOTE: Nail spacing should be a minimum of 7 inches on ceilings and 8 inches on walls; however, when double nailing is used, nails are spaced 2 inches apart every 12 inches.

TABLE 1: Fastening and Finishing Materials Required for 1,000 Square Feet of Drywall

Material	
1¼" annular-ring nail	6¼ lb.
1⅜" annular-ring nail	6¾ lb.
1" drywall screw	3 lb.
1¼" drywall screw	4¼ lb.
1⅝" drywall screw	5½ lb.
Ready-mix joint compound	80 lb. (50-lb. container)
Dry joint compound	50 lb. (25-lb. bag)
Perforated tape	370 lin. ft.
Texture paint	10 lb. to 50 lb. (25-lb. bags)

EXAMPLE: If a structure has 640 square feet to be covered with drywall and fastened with 1¼-inch annular-drywall screws, then multiply the amount needed for 1,000 square feet by the square footage to be covered, expressed as a decimal:

4¼ lb. × .640 = 2.7 lb. of drywall screws needed

b. Check manufacturer's recommendations to find the amount of adhesive needed for the type of adhesive you are using.

NOTE: Each type of drywall adhesive has a different coverage capability; therefore, always follow the manufacturer's recommendation.

c. Check plans and count the number of metal corners needed.

Estimating Materials

By using the building plan and your sketch, you can calculate the required number and size of drywall and fasteners.

Estimating Nails		
Drywall Thickness	Nail Type	Approx. lbs per 1,000 sq. ft. of Drywall
3/8", 1/2"	1 5/8" coated-type drywall nail	5 1/4" lb.
5/8"	1 7/8" coated-type drywall nail	5 1/4" lb.
After installing the drywall, the joints and corners of the drywall are reinforced with paper tape and a joint compound.		

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ASSIGNMENT SHEET 1	DRYWALL MATERIAL	A 1

Name _____ Score _____

OBJECTIVE 6

Estimate materials needed to drywall a structure.

INTRODUCTION

The use of drywall is a great convenience to the carpenter. It saves a great deal of time and money over constructing walls and ceilings from lath and plaster. However, these savings can be quickly lost if materials are poorly estimated. Estimates need to be accurate to avoid unnecessary handling of drywall or delays due to ordering too little material. This assignment will help you become proficient in estimating drywall materials.

DIRECTIONS

Operation and Calculation Skills
- Calculate with whole numbers
- Calculate with fractions
- Calculate with decimals
- Convert whole numbers to fractions
- Convert whole numbers to decimals
- Solve formulae and equations

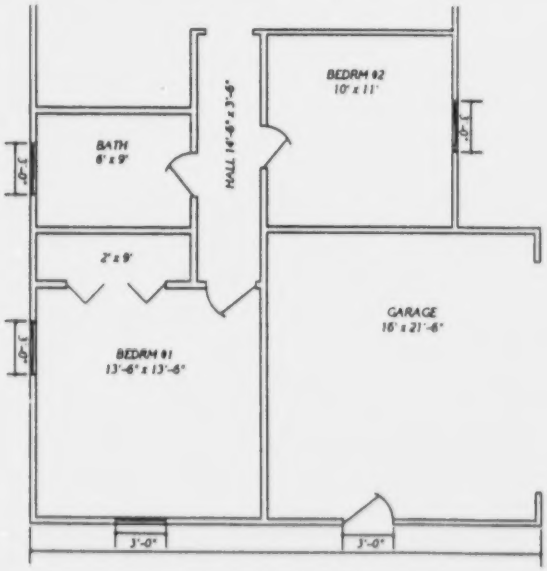
Math Application Skills
- Use English and metric measure

Job Acquisition/ Development Skills
- Master specific job task/procedure

Part 1

Calculate the square feet of walls and ceilings for the rooms in the structure illustrated below. Show your work in the space provided below and write the correct answers in the blanks. Round off your answer to the nearest whole number.

1. Bedroom #1, closet, with 8′ ceiling = _____
2. Bath and hallway with 8′ ceiling = _____
3. Garage with 12′ ceiling = _____



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Part 2

DIRECTIONS

Using Table 1, estimate the amounts of the following materials needed to apply and finish drywall for the structure illustrated on the preceding page. Show your work in the space below and write the correct answers in the blanks.

- Bedroom #1:
  1. Number of sheets of drywall = _____
  2. Pounds of 1¼-inch annular-ring nails = _____
  3. Feet of perforated joint tape needed = _____
  4. Pounds of ready-mix joint compound needed = _____
- Bath and hallway:
  1. Number of sheets of drywall = _____
  2. Pounds of 1¼-inch drywall screws = _____
  3. Feet of perforated joint tape needed = _____
  4. Pounds of ready-mix joint compound needed = _____
- Garage:
  1. Number of sheets of drywall = _____
  2. Pounds of 1¼-inch drywall screws = _____
  3. Feet of perforated joint tape needed = _____
  4. Pounds of ready-mix joint compound needed = _____

ASSIGNMENT ANSWERS

DRYWALL MATERIAL

A 1

NOTE: These answers are only a reference guide. Due to variations in rounding and procedures, the assignment sheet must be evaluated to the satisfaction of the instructor.

ASSIGNMENT SHEET 1

Part 1

1. 808 sq. ft.
2. 633 sq. ft.
3. 1,244 sq. ft.

Part 2

1. 26 shts.	1. 20 shts.	1. 26 shts.
2. 5.1 lbs.	2. 2.7 lbs.	2. 5.3 lbs.
3. 299 lin. ft.	3. 234 lin. ft.	3. 460 lin. ft.
4. 64 lbs.	4. 51 lbs.	4. 100 lbs.

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WRITTEN TEST	DRYWALL MATERIAL	A 1

Name _____ Score _____

OBJECTIVE 1

Given a list of terms associated with drywall materials, match them to their correct definitions. Write the letter that corresponds to the most correct answer.

_____ 1. The place where the edges of two pieces of drywall meet is called a

a. bond
b. joint
c. dimple
d. lap

_____ 2. What is the impression on drywall surfaces formed by a nail or screw driven to proper depths?

a. Dent
b. Joint
c. Valley
d. Dimple

_____ 3. The finish coat of compound that covers all previous coats is called a

a. topping
b. over-coat
c. laminate
d. dimple

_____ 4. The paper material used with joint compound to help cover and reinforce the joints is the

a. waxed seal
b. paper cover
c. perforated tape
d. paper tape

May be photocopied for student use.

_____ 5. A mineral used in construction material to retard the spread of fires is called

a. ash
b. wood laminate
c. gypsum
d. sulfur

_____ 6. The rigid sheathing material made of a non-combustible core and applied to interior finish walls and ceilings is called

a. drywall
b. laminated wood
c. bedding
d. topping

_____ 7. A joint compound specially blended to set in 20 to 90 minutes and used in construction is

a. quick seal
b. quick-weld compound
c. ever-last compound
d. fast-set compound

_____ 8. The process of spreading joint compound so that it tapers to a very thin layer is known as

a. light spreading
b. single layered
c. topping
d. featheredging

OBJECTIVE 2 **Given a description, select the types of drywall.**

_____ 1. A type of drywall that has a higher resistance to fire is known as

a. fire baked drywall
b. insulated drywall
c. brick drywall
d. fire-rated drywall

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_____ 2. A drywall that is colored green or blue is commonly used in bathrooms because it

a. has higher insulation
b. resists moisture
c. is easy to clean
d. is more fire resistant

_____ 3. Drywall that is available in a variety of surface material, designs, and patterns is called

a. pre-finished drywall
b. designer drywall
c. patterned drywall
d. over-tone drywall

_____ 4. A drywall that has insulation mixed into its core is known as

a. insulated drywall
b. cored drywall
c. standard drywall
d. fiber drywall

_____ 5. What is the drywall that has a harder core than regular drywall?

a. Super drywall
b. Type "HC" drywall
c. Type "X" drywall
d. Hi-density drywall

OBJECTIVE 3 **Select from a list standard sizes of drywall.**

_____ 1. The standard thickness of drywall is

a. ½″
b. ⅝″
c. 1″
d. all the above

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_____ 2. The standard length of drywall is

a. 8′
b. 10′
c. 12′
d. All the above

_____ 3. The standard width of drywall is

a. 2′
b. 3′
c. 4′
d. 14′

OBJECTIVE 4 **Given alternatives, choose benefits of using drywall.**

_____ 1. One of the benefits of using drywall is

a. its light weight
b. that it's noncombustible
c. that it's combustible
d. ease of sanding

_____ 2. Drywall benefits include

a. ease of application
b. ease of repair
c. economical
d. all the above

_____ 3. Drywall provides a good base for applying

a. finish material
b. shingles
c. siding
d. paneling

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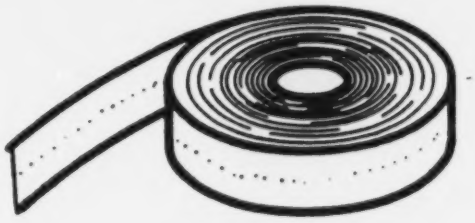
OBJECTIVE 5

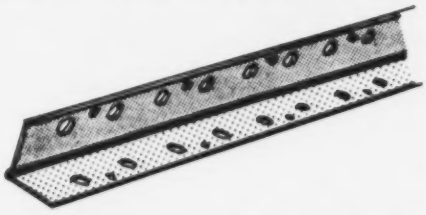
Given a drawing, identify hardware and fasteners used with drywall.

_____ 1. The drawing below represents a



a. perforated tape
b. masking tape
c. compound tape
d. metal bead

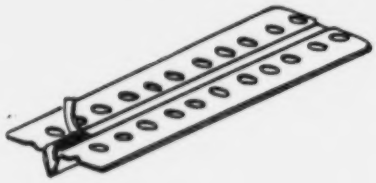
_____ 2. The hardware shown is a



a. channel bead
b. metal casing bead
c. perforated metal riser
d. metal corner bead

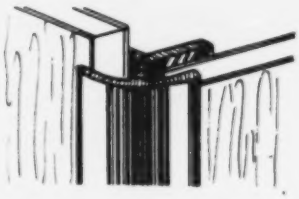
May be photocopied for student use.

_____ 3. What type of drywall hardware is represented in the drawing below?



a. Zipped corner
b. Expansion joint
c. "V" joint
d. Flex joint

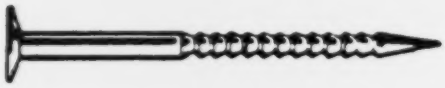
_____ 4. The type of molding illustrated below is a(an)



a. end cap
b. divider
c. outside corner
d. inside corner

May be photocopied for student use.

_____ 5. The drywall fastener shown below is a(an)

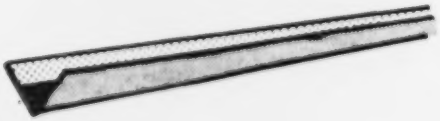


a. coated nail
b. ringed screw
c. annular-ring nail
d. twisted nail

_____ 6. The type of drywall fastener shown below is a(an)

a. drywall screw
b annular-ring nail
c. coated twist-nail
d. ringed twist-nail

_____ 7. The figure below is called a/an



a. steel corner bead
b. flex-tape shaped into a corner
c. divider
d. inside dove-tail

OBJECTIVE 6

Objective 6 is evaluated through the completion of an assignment sheet.

May be photocopied for student use.

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WRITTEN TEST ANSWERS	DRYWALL MATERIAL		A 1
OBJECTIVE 1	1. b	5. c	
	2. d	6. a	
	3. a	7. b	
	4. c	8. d	
OBJECTIVE 2	1. d	4. a	
	2. b	5. c	
	3. a		
OBJECTIVE 3	1. d		
	2. a		
	3. c		
OBJECTIVE 4	1. b		
	2. d		
	3. a		
OBJECTIVE 5	1. a	5. c	
	2. d	6. a	
	3. b	7. b	
	4. c		

CIMC
TEST CODE SHEET

VOCATIONAL PROGRAM (BOOK TITLE) INTRODUCTION TO DRYWALL

UNIT NUMBER AND TITLE – A1 – DRYWALL MATERIAL

TOTAL NUMBER OF TEST QUESTIONS 26

TOTAL NUMBER OF BASIC SKILL QUESTIONS 1

OBJECTIVE NUMBER	TEST QUESTION NUMBER(S)	BASIC SKILL CODE(S)
1	**1-4, 6-8**	**X**
1	**5**	**S**
2	**1-5**	**X**
3	**1-3**	**X**
4	**1-3**	**X**
5	**1-7**	**X**
6	**Evaluated on Assignment Sheet**	

OBJECTIVE SHEET	DRYWALL TOOLS	A 2

INTRODUCTION

This unit deals with the identification and safe use of drywall tools and equipment.

Using the right tools for specific tasks will improve efficiency and reduce labor costs.

PREREQUISITE

Fundamentals of Construction.

UNIT OBJECTIVE

After completing this unit, the student should be able to identify tools and state safety guidelines in the use of common drywall tools. The student will demonstrate these competencies by completing the written test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completing this unit, the student should be able to show the ability to:

1. Given a list of terms associated with drywall tools, match them to their correct definitions.
2. Given alternatives, choose the correct guidelines for the use and care of drywall tools.
3. Given a drawing, identify tools, equipment, and accessories used in drywall installation.
4. Given a drawing, identify common tools used to finish drywall.

SUGGESTED ACTIVITIES	DRYWALL TOOLS	A 2

PREPARATION

- Review unit and plan presentation.
- Order or obtain materials to supplement unit.
- Give an overview of the course, explaining the organization of the materials from the foundation to the finished house.
- Introduce unit.

DELIVERY

Objective 1: Given a list of terms associated with drywall tools, match them to their correct definitions.

- Use Information Sheets to discuss terms and definitions associated with drywall tools.
- Show the class samples of the various terms.

Objective 2: Given alternatives, choose the correct guidelines for the use and care of drywall tools.

- Use Information Sheets to discuss guidelines for care and safe use of drywall tools, identification and use of tools.
- Discuss and demonstrate proper care and safe use of the tools.

Objective 3: Given a drawing, identify tools, equipment, and accessories used in drywall installation.

- Demonstrate the use of the tools, then allow each student to demonstrate the use of the tools.
- Use tool catalogs to show tools and equipment not available.
- Show the class samples of the various tools listed in the Information Sheet.
- Encourage students to buy quality tools.
- Allow students to handle the tools.

Objective 4: Given a drawing, identify common tools used to finish drywall.

- Use tool catalogs to show finishing tools to students.
- Show the class those finishing tools that are readily available.

EVALUATION

Pretest

- Give written test as pretest.
- Determine individual study requirements from pretest results.
- Counsel students individually on pretest results and study requirements.
- Modify materials in unit or create supplementary materials for individual students as required.

Skill Test

- Complete appropriate section of competency profiles.
- Reteach and reevaluate if necessary.
- Modify materials in unit or create supplementary materials for individual students as required.

Written Test

- Explain to students that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give the written test.

  NOTE: The written test may be given in sections if desired.
- Complete appropriate sections of competency profiles.
- Reteach and retest if necessary.

- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

SUGGESTED RESOURCES

Print Media

- *Bon Tool Company Catalog*. Bon Tool Company: 4430 Gibsonia Rd., Gibsonia, PA 15044-9986. (412) 443-7080.
- *Gypsum Construction Handbook*. United States Gypsum Company: 101 South Wacker Drive, Chicago, IL 60606-4385.

UNIT REFERENCES

- Toenjes, Leonard P. *Building Trades Dictionary*. American Technical Publishers, Inc.: Homewood, IL..1989.
- United Stated Gypsum Company. Subsidiary of USG Corporation: Chicago, IL.
- Wagner, Willis H. *Modern Carpentry*. Goodheart-Willcox Company, Inc.: South Holland, IL.
- Willey, Al. *Commercial Carpentry*. Stillwater, OK: Oklahoma Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America. 1993.

INFORMATION SHEET	DRYWALL TOOLS	A 2

OBJECTIVE 1

Given a list of terms associated with drywall tools, match them to their correct definitions.

- **caulking gun** — tool used to hold and dispense tubes of caulking, sealants, and adhesives
- **drywall foot lift** — tool designed so one end will fit under the edge of drywall and will lift the sheet by putting foot pressure on the opposite end
- **drywall rasp** — tool used to smooth rough-cut edges of drywall
- **ground fault interruption (GFI)** — special circuits used to protect workers from electrical shock when using AC powered tools and equipment
- **outlet cutter** — tools used to cut out openings in drywall for electrical outlets; available with various size cutter heads
- **paddle mixer** — a set of blades that attach to an electric drill to stir paint, joint compound; etc.
- **screwgun** — a power tool with interchangeable tips for turning screws
- **stilts** — equipment used by drywall workers to elevate the worker to the proper working height
- **taping machine (banjo)** — equipment used to apply tape and joint compound to drywall joints

OBJECTIVE 2 **Given alternatives, choose the correct guidelines for the use and care of drywall tools.**

- Guidelines

  NOTE: These are the most common guidelines to use and care for drywall tools. Always follow OSHA approved safety rules and regulations.

- Stay alert when using tools.
  - — Keep fingers away from cutting edges.
  - — Work away from your body when using cutting tools.
- Store tools properly when not in use.
  - — Do not carry tools in your pocket.
  - — Do not place tools on anything where they can roll off.
  - — Protect cutting edges.
  - — Lightly oil tools before storing.
  - — Store tools in a dry place.
  - — Use the correct tool for the job.
  - — Keep tools sharp.
  - — Keep tools clean.
  - — Repair broken or damaged tools promptly.
  - — Dispose of broken or damaged tools that cannot be repaired.
  - — Inspect tools frequently to make sure they are in good condition.
  - — Always wear eye protection and a hard hat.
  - — Lift heavy objects properly.

— Attach power tools to AC outlets that protect workers with ground fault interruption (GFI) circuits.

— Wear an approved respirator when necessary to protect yourself from exposure to hazardous materials.

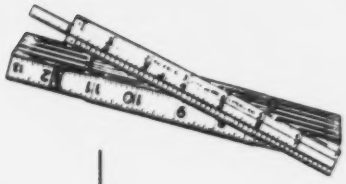
— Do not abruptly distract a coworker who is using a power tool.

OBJECTIVE 3 **Given a drawing, identify tools, equipment, and accessories used in drywall installation.**

- **Tools, equipment, and accessories used to install drywall** (Figures 1-20)

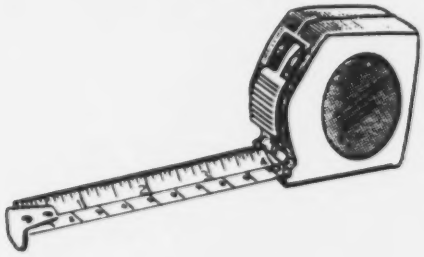
— Folding rule

FIGURE 1



— Steel tape

FIGURE 2

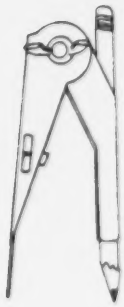


— Divider

FIGURE 3

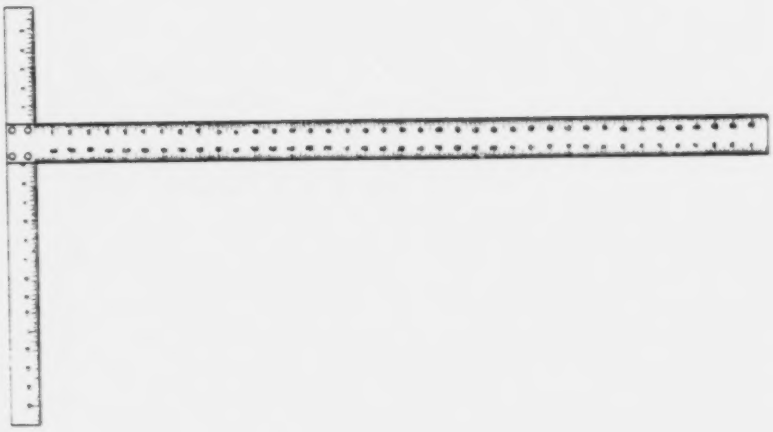
— Scribe

FIGURE 4



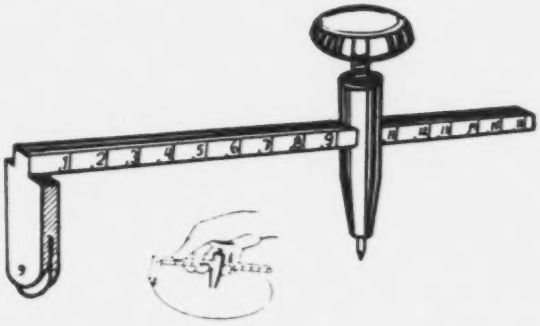
— Drywall T-square

FIGURE 5



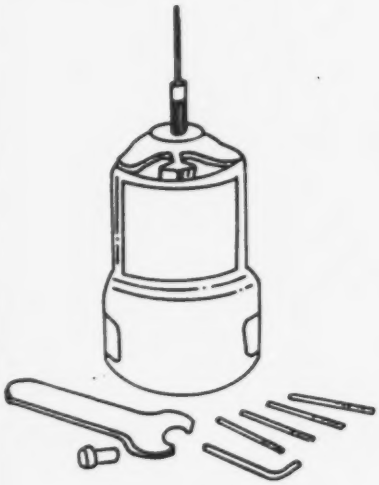
— Circle cutter

FIGURE 6



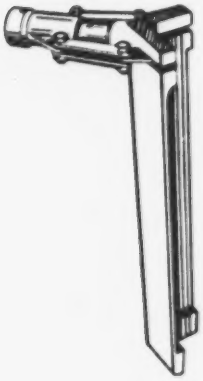
— Ream machine

FIGURE 7



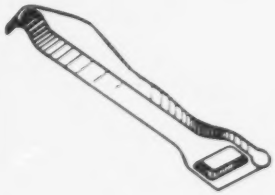
— Cornerbead clincher

FIGURE 8



— Carrier lifter

FIGURE 9

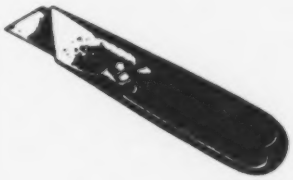


— Drywall lift

FIGURE 10

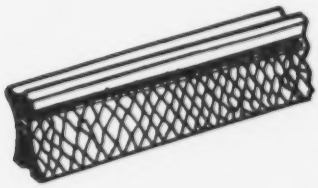
— Utility knife

FIGURE 11



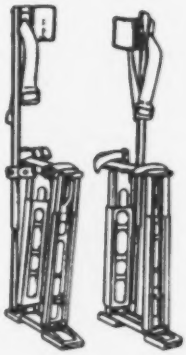
— Drywall rasp

FIGURE 12



— Stilts

FIGURE 13



— Drywall foot lift

FIGURE 14

— Drywall hammer

FIGURE 15

— Utility saw

FIGURE 16

— Caulking gun

FIGURE 17

— Drywall saw

FIGURE 18

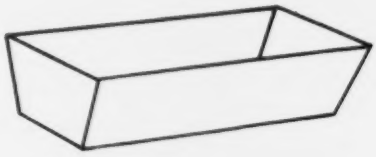
OBJECTIVE 4

Given a drawing, identify common tools used to finish drywall.

- **Tools and equpment used to finish drywall** (Figures 19-27)

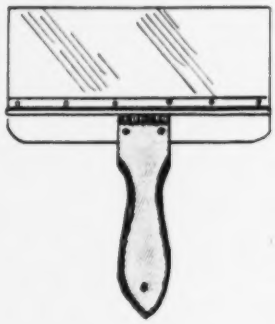
— Joint compound pan

FIGURE 19



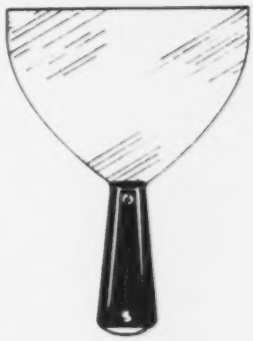
— Taping knife (12")

FIGURE 20



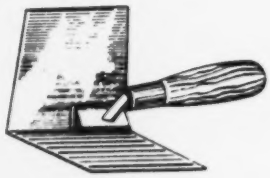
— Putty knife

FIGURE 21



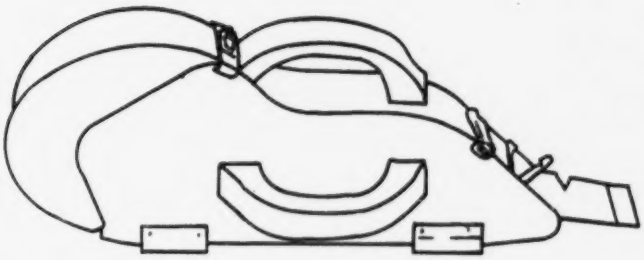
— Inside-corner taping tool

FIGURE 22



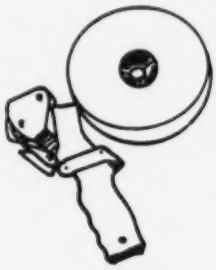
— Taping machine (banjo)

FIGURE 23



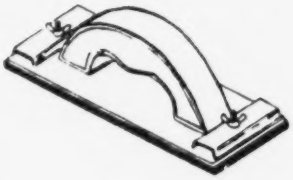
— Hand tape gun

FIGURE 24



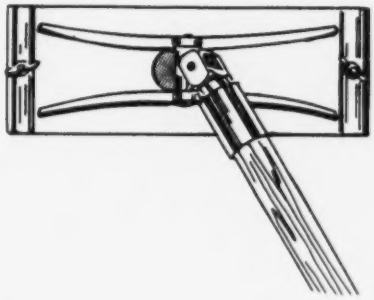
— Hand sander

FIGURE 25



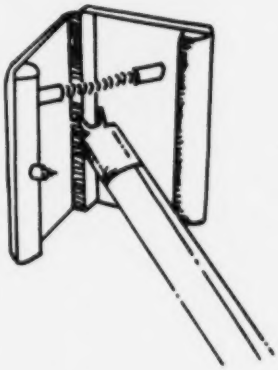
— Long-handled sander

FIGURE 26



— Long-handled corner sander

FIGURE 27



— Screwgun

FIGURE 28

WRITTEN TEST	DRYWALL TOOLS	A 2

Name _____ Score _____

OBJECTIVE 1

Given a list of terms associated with drywall tools, match them to their correct definition. Write in the letter that corresponds to the most correct answer.

_____ 1. A tool used to smooth rough-cut edges of drywall is called a

a. banjo saw
b. texture machine
c. compound file
d. drywall rasp

_____ 2. The tool used to hold and dispense tubes of caulking, sealants, and adhesives is a

a. caulking gun
b. dispenser tool
c. drywall gun
d. banjo

_____ 3. What is the name of a specialized tool used to cut openings in drywall for electrical outlets?

a. Outlet cutter
b. Outlet saw
c. Foot lift
d. Drywall knife

_____ 4. What is the term to describe equipment used by drywall workers to elevate themselves to the proper working height?

a. Foot lift
b. Stilts
c. Banjoes
d. Drum lifter

May be photocopied for student use.

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_____ 5. A power tool with interchangeable tips for turning screws is a

a. adapter drill
b. power bit
c. drywall gun
d. screwgun

OBJECTIVE 2

Given alternatives, choose the correct guidelines for the use and care of drywall tools.

_____ 1. Guidelines for the safe use of tools include

a. carry tools in your pocket
b. use any tool for any job
c. keep broken tools for later use
d. keep fingers away from cutting edges

_____ 2. When working with power tools, a worker must wear

a. eye protection and a hard hat
b. gloves
c. goggles and leather gloves
d. hard hat and gloves

_____ 3. When using AC powered tools, the worker must use AC outlets equipped with _____ circuits.

a. OFE
b. GFI
c. KOE
d. TEC

_____ 4. To protect yourself from exposure to hazardous materials, wear an (a)

a. goggles
b. tool pouch
c. approved respirator
d. cloth gloves

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_____ 5. Do not _____ a co-worker when he is using a power tool.

a. give assistance to
b. abruptly distract
c. offer help to
d. encourage safe practices to

_____ 6. When storing tools, protect the

a. tools from theft
b. cord and trigger or switch
c. cutting edges
d. surface they rest on

_____ 7. Damaged tools should

a. always be repaired
b. be replaced if they can't be repaired
c. disposed of if they can't be repaired
d. sold if they can be repaired

_____ 8. A worker held a small piece of drywall in his left hand and held a utility knife in his right hand, pulling downward to trim the drywall. The knife slipped and sliced open the muscle just below his left thumb. He couldn't work and was replaced by another drywall installer. What safety guidelines did he fail to follow?

a. Do not carry tools in your pocket.
b. Work away from your body when using cutting tools.
c. Protect cutting edges.
d. Use the proper tool for the job.

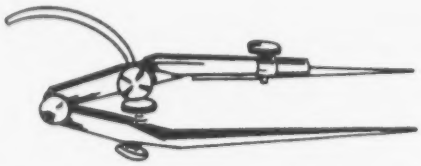
May be photocopied for student use.

OBJECTIVE 3 **Given a drawing, identify tools, equipment, and accessories used in drywall installation.**

_____ 1. The drawing below illustrates a

a. utility knife
b. drywall cutter
c. circle cutter
d. drywall marker

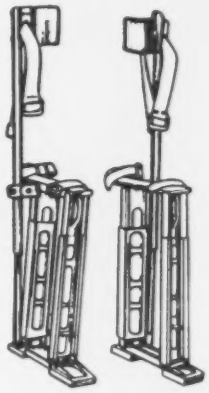
_____ 2. The tool show below represents a



a. scribe
b. circle cutter
c. divider
d. projector

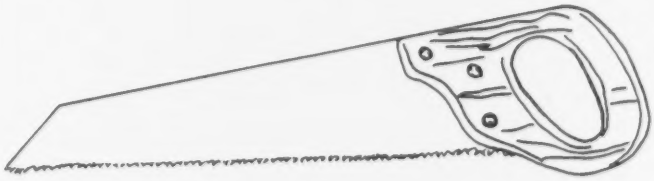
May be photocopied for student use.

_____ 3. The equipment shown below are



a. drywall lifters
b. drywall carriers
c. stilts
d. scaffolds

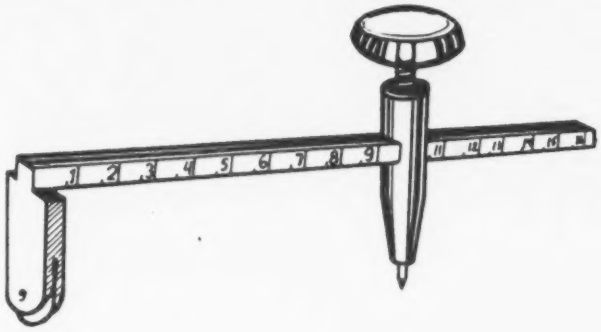
_____ 4. This figure represents a



a. utility saw
b. drywall saw
c. crosscut saw
d. ripping saw

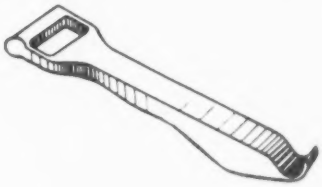
May be photocopied for student use.

_____ 5. The tool displayed in the figure below is known as a



a. scribe
b. protractor
c. divider
d. circle cutter

_____ 6. This tool has the name of



a. drywall bar
b. carrier/lifter
c. drywall scraper
d. crowbar

May be photocopied for student use.

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_____ 7. The title of the tool pictured below is a

a. caulking gun
b. outlet cutter
c. spreader
d. cornerbead clincher

_____ 8. This tool is called a

a. drywall knife
b. drywall cutter
c. utility saw
d. waffle knife

May be photocopied for student use.

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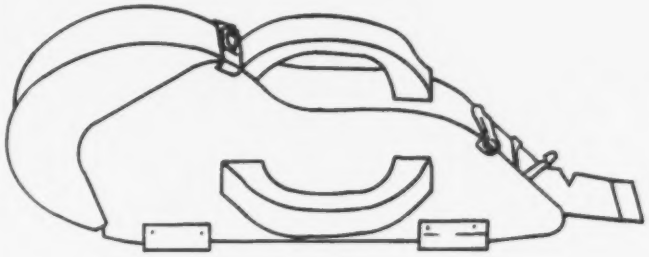
OBJECTIVE 4 **Given a drawing, identify common tools used to finish drywall.**

_____ 1. The tool displayed below is called a



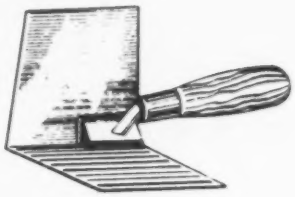
a. corner sander
b. taping machine (banjo)
c. tape gun
d. stripping plane (banjo)

_____ 2. The tool shown below is known as a

a. joint compound pan
b. tape box
c. wet tub
d. finishing box

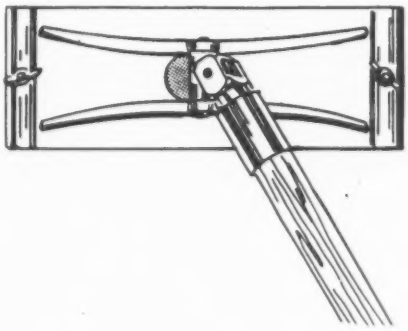
May be photocopied for student use.

_____ 3. This tool is called a/an



a. outside-corner taping tool
b. inside-corner taping tool
c. taping knife
d. corner sander

_____ 4. The tool displayed below is a



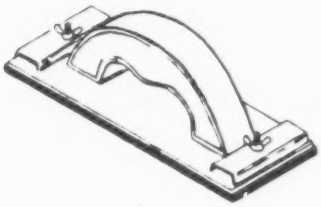
a. long-handled corner sander
b. hand sander
c. long-handled tape knife
d. long-handled sander

May be photocopied for student use.

_____ 5. This tool is a

a. drywall bit
b. screwgun
c. drywall cutter
d. power bit

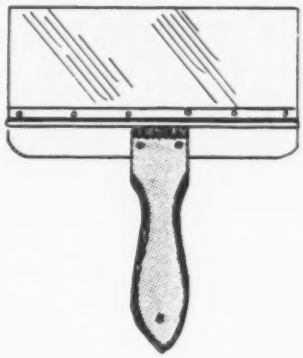
_____ 6. This drywall finishing tool is called a



a. hand sander
b. drywall trowel
c. drywall cycle
d. hand-held tape knife

May be photocopied for student use.

_____ 7. This tool is called a



a. tape trowel
b. hand sander
c. texture spreader
d. taping knife

May be photocopied for student use.

WRITTEN TEST ANSWERS	DRYWALL TOOLS		A 2
OBJECTIVE 1	1. d	4. b	
	2. a	5. d	
	3. a		
OBJECTIVE 2	1. d	5. b	
	2. a	6. c	
	3. b	7. c	
	4. c	8. b	
OBJECTIVE 3	1. a	5. d	
	2. c	6. b	
	3. c	7. a	
	4. b	8. c	
OBJECTIVE 4	1. b	5. b	
	2. a	6. a	
	3. b	7. d	
	4. c		

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CIMC
TEST CODE SHEET

VOCATIONAL PROGRAM (BOOK TITLE) INTRODUCTION TO DRYWALL

UNIT NUMBER AND TITLE – A2 – DRYWALL TOOLS

TOTAL NUMBER OF TEST QUESTIONS 28

TOTAL NUMBER OF BASIC SKILL QUESTIONS 0

OBJECTIVE NUMBER	TEST QUESTION NUMBER(S)	BASIC SKILL CODE(S)
1	1-5	X
2	1-8	X
3	1-8	X
4	1-7	X

OBJECTIVE SHEET	APPLIED SKILLS	A 3

INTRODUCTION

The task of applying and finishing drywall can be difficult without the knowledge and skills exercised in this unit.

This unit provides experience in applying drywall to both wood and metal framing. It also gives you practice in drywall finishing techniques that will improve workmanship.

PREREQUISITE

Fundamentals of Construction

UNIT OBJECTIVE

After completing this unit, the student will be able to apply and finish a drywall surface. The student will demonstrate these competencies by completing the assignment sheet, job sheets, and written test with a minimum of 85 percent accuracy.

SPECIFIC OBJECTIVES

After completing this unit, the student will be able to show the ability to:

1. Given a list of terms associated with drywall skills, match them to their correct definitions.
2. Given a list of methods, choose those used to apply drywall.
3. Choose the correct steps needed to prepare to install drywall.
4. Given alternatives, select the correct guidelines for the installation of drywall. (Assignment Sheet 1)
5. Install drywall on a wooden frame. (Job Sheet 1)
6. Install drywall on a metal frame. (Job Sheet 2)
7. Finish a drywall surface. (Job Sheet 3)

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PREPARATION

- Review unit and plan presentation.
- Order or obtain materials to supplement unit.
- Give an overview of the course, explaining the organization of the materials from the foundation to the finished house.
- Introduce unit.

DELIVERY

Objective 1: Given a list of terms associated with drywall skills, match them to their correct definitions.

- Discuss terms and definitions associated with drywall.
- Show the class samples of materials when possible.
- Show the class a cut-away wall section display with the drywall at various stages of installation to illustrate terms.

Objective 2: Given a list of methods, choose those used to apply drywall.

- Discuss each method and explain those that are used often in your area.
- Describe experiences in which one method worked better or in which problems were encountered.

Objective 3: Choose the correct steps needed to prepare to install drywall.

- Make up a checklist with blanks for students to perform and check off each item that must be completed prior to drywall installation.

APPLICATION

Objective 4: Given alternatives, select the correct guidelines for the installation of drywall. (Assignment Sheet 1)

- Take a field trip to a construction site and while observing the workmen and skills being performed, have students list the different guidelines being used by the workers. Also make a list of other guidelines that are not included here.
- Assign students to complete the assignment sheet.

Objective 5: Install drywall on a wooden frame. (Job Sheet 1)

Objective 6: Install drywall on a metal frame. (Job Sheet 2)

Objective 7: Finish a drywall surface. (Job Sheet 3)

- Allow students to practice the procedures in the job sheets.

EVALUATION

Pretest

- Give written test as pretest.
- Determine individual study requirements from pretest results.
- Counsel students individually on pretest results and study requirements.
- Modify materials in unit or create supplementary materials for individual students as required.

Skill Test

- Evaluate students on assignment sheet activities.
- Evaluate students on job sheet activities.
- Complete appropriate section of competency profiles.
- Reteach and reevaluate if necessary.
- Modify materials in unit or create supplementary materials for individual students as required.

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Written Test

- Explain to students that they will be asked to demonstrate on the written test actions listed in the specific objectives.
- Give the written test.

  NOTE: The written test may be given in sections if desired.
- Complete appropriate sections of competency profiles.
- Reteach and retest if necessary.
- Review individual and group performance in order to evaluate teaching methods. Adjust scope, sequence, or instructional approaches for additional lessons as required.

SUGGESTED RESOURCES

Print Media

- *Bon Tool Company Catalog*. Bon Tool Company: 4430 Gibsonia Rd., Gibsonia, PA 15044-9986. (412) 443-7080.
- *Goldblatt Tool Company Catalog*. Goldblatt Tool Company: 511 Osage, P.O. Box 2334, Kansas City, KS 66110. (913) 621-3010.
- *Gypsum construction Handbook*. United States Gypsum Company: 101 South Wacker Drive, Chicago, IL 60606-4385.

UNIT REFERENCES

- Georgia-Pacific Corporation. Atlanta, GA.
- *Goldblatt Tool Company Catalog*. Goldblatt Tool Company: Kansas City, KS.
- Toenjes, Leonard P. *Building Trades Dictionary*. American Technical Publishers, Inc.: Homewood, IL. 1989.

- United States Gypsum Company. Subsidiary of USG Corporation: Chicago, IL.
- Wagner, Willis H. *Modern Carpentry*. Goodheart-Willcox Company, Inc.: South Holland, IL.
- Willey, Al. *Commercial Carpentry*. Oklahoma Department of Vocational and Technical Education/Curriculum and Instructional Materials Center, and The Associated General Contractors of America: Stillwater, OK. 1993.

INFORMATION SHEET	APPLIED SKILLS	A 3

OBJECTIVE 1

Given a list of terms associated with drywall skills, match them to their correct definitions.

- **backing** — wood nailed between structural members to provide a solid base for fastening drywall
- **bedding** — process used to embed perforated tape to drywall joints, to finish over tape and corner bead, and to finish over nail or screw heads
- **cutouts** — openings that are made in drywall for convenience of access to other areas or for electrical outlets, etc.
- **dimple** — impression on drywall surface formed by a nail driven to proper depth
- **double nailing** — pattern used when two nails are spaced 2 inches apart every 12 inches; pattern used on intermediate joists
- **drywall** — rigid sheathing material made with a noncombustible core (usually gypsum) that is surfaced with treated paper or some other sheet material applied to interior finish walls and ceilings
- **featheredge** — to spread joint compound or topping so that it taper to a thin layer
- **joint** — place where edges of two pieces of drywall meet
- **joint compound** — material used to embed perforated tape to drywall joints, to finish over tape and corner bead, and to finish over nail or screw heads
- **laminate** — to bond together two or more layers of material
- **layout** — detailed plan, design, or arrangement of a project

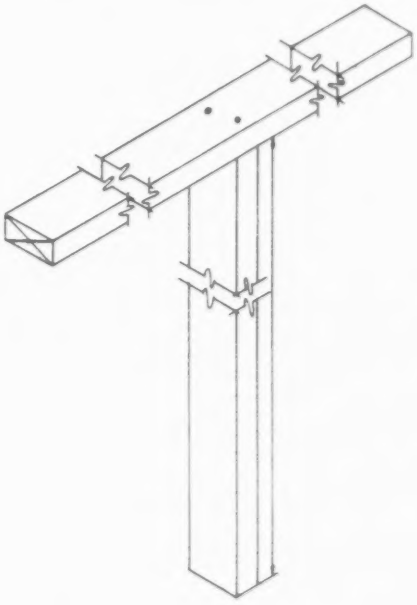
- **perforated tape** — paper tape used as reinforcement at drywall joints to keep surface from cracking

- **popping** — a term used to describe drywall fasteners being forced out of wall and ceiling framing. This could be a result of improper fasteners being used, spacing of fasteners not adequate, bowing of drywall, or a shift in framing position.

- **scribe** — adjustable tool used to make irregular parallel marks on an object for cutting and fitting a piece of material

- **T-brace** — a brace used to hold drywall in place, against the ceiling joist, while fasteners are being installed and/or adhesive is setting (Figure 1)

FIGURE 1



- **topping** — finish coat of compound that covers all previous coats

OBJECTIVE 2 **Given a list of methods, choose those used to apply drywall.**

- Methods used to apply drywall
  - — Nailing method
  - — Adhesive method
  - — Nail-on and adhesive method
  - — Double nailing method
  - — Screw method

OBJECTIVE 3 **Choose the correct steps needed to prepare to install drywall.**

- Ensure that these steps have been completed *before* installing drywall.
  - — Ceiling backing has been installed
  - — Walls and studs straight
  - — Blocking for cabinets, sinks, and bath fixtures has been installed
  - — Electrical rough-in completed
  - — Plumbing rough-in completed
  - — Heating vent and air conditioning rough-in completed
  - — All building and fire codes have been or will be met.
  - — Exterior wall insulation has been installed
  - — All inspections have been made and approved

OBJECTIVE 4

Given alternatives, select the correct guidelines for the installation of drywall.

- General guidelines for installing drywall
  - — Always apply drywall at right angles to ceiling joists
  - — When specified, install drywall horizontally on walls
  - — Cut openings for fixtures no more than ⅛ inch larger than fixture
  - — Plan installation sc that vertical joints are in-line with door and window joints whenever practical
  - — When sanding surface of drywall, do not damage the face of the drywall
  - — Stagger panels on opposite side of wall so that joints occur on different studs
  - — Wear protective respirator when sanding drywall joints
  - — Closely follow recommendations for drywall fastener quantities, size, and spacing to prevent fastener "popping."
- Specific guidelines for installing drywall

  1. Preparing

     There are several considerations in planning drywall job. These steps will improve the appearance and reduce the cost.

     a. Consider the use of 12′ or 8′ lengths of drywall.

     b. Plan to install the drywall across the studs and/or joists.

     c. Refer to the specifications for instructions to hang drywall.

d. Decide if the job plans require the use of nails, screws, and/or adhesive as the method of application.

e. Build "T" braces and ensure all tools and material are readily available and ready for use.

2. Tools required

The basic tools you need are:

a. Drywall cutting knife and heavy-duty knife blade

b. Drywall screwgun, hammer, or regular crown-head carpenter's claw hammer

c. 4-foot T-square or steel straightedge

d. Steel tape measure

e. Utility saw or keyhole saw

f. Joint-finishing knives with 4-inch and 10-inch blades

g. Plastic pan for joint compound

h. Sandpaper (medium texture) for joint finishing

i. Caulking gun

j. T-braces (optional)

3. Cutting drywall

a. Use T-square for marking and a drywall knife for scoring. With the knife at right angels to the board, score completely through the face paper. Then apply firm, even pressure to snap the board. fold back the partially separated portion of the board and use the knife again to cut the back paper.

b. Rough edges should be smoothed. Panels can be cut with a saw if desired.

4. Cutting openings

   a. It may be necessary to cut holes in the drywall for electrical outlets, light receptacles, etc. The distance of the opening from the end and edge of the board should be carefully measured and marked on the face of the drywall. The opening should then be outlined in pencil and cut out with a keyhole saw.

   b. The cutout should be no more than ⅛" larger than outlet. The cutout must be accurate or the cover plate will not conceal the hole.

5. Ceiling installation

   a. It is more difficult to install the ceiling boards because of the overhead positioning. It is desirable to have T-braces to hold the board in place while it is being installed. A satisfactory T-brace consists of a 2-foot piece of 1×4 nailed onto the end of a 2×4. The length should be about 1 inch longer than the floor-to-ceiling height. The brace is placed at a slight angle and pushed into place.

   b. If nails are used, they should be 7 inches apart. When the adhesive nail-on method is used, the edges should be nailed, using only one nail per joist in the field of the board. All edges should be supported on framing. The nails should be driven to bring the board tight to the framing, then another blow struck to dimple the nail, being careful not to break the face paper.

6. Wall application

   a. In horizontal application on sidewalls, install the top board first. Push the board up firmly against the ceiling and nail, placing nails 7 inches apart. One exception, however, is to keep all nails back 7 inches from interior ceiling angles. Nails in the interior angles are quite likely to pop. If the adhesive nail-on method is used, all of the field nailing can be eliminated. The nailing is around the edges of the board only. If the board is bowed out in the center, it may be advisable to secure it with a temporary nail until the adhesive sets.

   b. A vertical application places the long edges of the wallboard parallel to the framing members. This is more desirable if the ceiling height of your wall is greater than 8′-2″ or the wall is 4 feet wide or less. Nailing recommendations are the same as for horizontal application.

7. Metal corner bead

   a. To protect corners from edge damage, install metal corner bead after you have installed the drywall. Nail the metal corner bead every 5 inches through drywall into wood framing.

8. Joint finishing

   a. A premixed material such as Ready-Mix joint compound is the easiest to use to finish joints, corners, and nailheads. A minimum of three coats of Ready-Mix is recommended for all taped joints. This includes an embedding coat to bond the tape and two finishing coats over the tape. Each coat should dry thoroughly, usually 24 hours, so that the surface can be easily sanded.

   b. When sanding, wrap your sandpaper around a wood sanding block so you sand the surface evenly. Do not over-sand or sand the paper surface. This may outline the joint or nailhead through the paint.

c. Wear a protective respirator while sanding.

9. Applying bedding compound

   a. Use your 4-inch joint-finishing knife to apply the Ready-Mix joint compound fully and evenly into the slight recess created by the adjoining edges of the board.

10. Applying drywall tape

    a. Next, take your drywall tape and center it over the joint. Press the tape firmly into the bedding compound with your drywall knife held at a 45-degree angle. The pressure should squeeze some compound from under the tape, but enough must be left for a good bond.

11. Applying finishing coats

    a. When thoroughly dry, at least 24 hours, lightly sand. Then apply a fill coat extending a few inches beyond the edge of the tape, and feather the edges of the compound. When the first finishing coat is thoroughly dry, use your 10-inch joint-finishing knife to apply a second coat, and feather the edges about 1½ inches beyond the first coat.

    b. When this coat is dry, sand lightly to a smooth, even surface. Wipe off the dust in preparation for the next step.

       NOTE: Do not sand the drywall to the tape. If you do, use a wet sponge to mop the surface.

    c. Be sure to use protective respirator when sanding.

12. Finishing nailheads

    a. Draw your 4-inch joint-finishing knife across nails to be sure they are below the surface of the board. Apply first coat of Ready-Mix with even pressure to smooth compound level with the surface of the board. Do not bow knife blade with excess pressure as this tends to scoop compound from dimpled area.

b. When dry, apply second coat; let dry; sand lightly, and apply third coat. Sand lightly before applying your decoration. An additional coat may be needed, depending on temperature and humidity.

c. Be sure to use a protective respirator when sanding.

13. Finishing end joints

a. You use basically the same steps with end or butt joints as you do for tapered edges. The end joints are not tapered, so care must be taken not to build up the compound in the center of the joint. This encourages ridging and shadowed areas. Feather the compound well out on each side of the joint. Final application of joint compound should be 14 to 18 inches wide.

14. Finishing metal corner bead

a. Be sure the metal corner is attached firmly. Take your 4-inch finishing knife and spread the Ready-Mix 3 to 4 inches wide from the nose of the bead, covering the metal edges. When completely dry, sand lightly and apply second coat, feathering edges 2 to 3 inches beyond the first coat. A third coat may be needed, depending on your coverage. Feather the edges of each coat 2 or 3 inches beyond the preceding coat.

b. Be sure to use a protective respirator when sanding.

ASSIGNMENT SHEETS	APPLIED SKILLS	A 3

Name _____ Score _____

OBJECTIVE 4

Given alternatives, select the correct guidelines for the installation of drywall.

INTRODUCTION

Drywall installation requires a great number of steps for completion. This exercise will assist you in clearly understanding those steps.

INSTRUCTIONS

Write in the letter that corresponds to the word(s) that correctly complete the statements.

Reading Comprehension Skills
- Gain factual information
- React to written material

Job Acquisition/ Development Skills
- Master specific job task/procedure

_____ 1. When specified, install wall drywall.

a. vertically
b. horizontally
c. at right angle
d. without attaching

_____ 2. Wear a _____ _____ when sanding drywall joints.

a. rubber glove
b. special boot
c. protective respirator
d. cloth glove

_____ 3. Plan the installation so that _____ _____ are in-line with door and window jambs whenever practical.

a. vertical joints
b. horizontal joints
c. no joints
d. all joints

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_____ 4. Plan to install the drywall _____ the studs and/or joists.

a. across
b. parallel to
c. diagonal to
d. angular to

_____ 5. Closely follow recommendations for drywall fastener to prevent fastener _____ and _____ "popping."

a. color and style
b. size and spacing
c. length and color
d. size and style

_____ 6. Use a drywall _____ to mark prior to cutting.

a. speed square
b. framing square
c. combination square
d. T-square

_____ 7. The cutout should be no more than _____ larger than the outlet.

a. ½"
b. ¼"
c. ⅛"
d. 1/16"

_____ 8. The length of a T-brace should be about _____ longer than the floor-to-ceiling height.

a. 1"
b. 2"
c. 3"
d. 4"

_____ 9. Nail the metal corner bead every _____ through drywall into wood framing.

a. 3″
b. 4″
c. 5″
d. 6″

_____10. Before sanding, a joint should be allowed to dry thoroughly, usually _____ hours.

a. 12
b. 24
c. 36
d. 48

_____11. A minimum of _____ coats of Ready-Mix is recommended for all taped joints.

a. 1
b. 2
c. 3
d. 4

_____12. When applying drywall tape, the pressure should squeeze _____ of the compound from underneath the tape.

a. some
b. all

_____13. The final application of joint compound should be _____ wide.

a. 8″ to 10″
b. 10″ to 12″
c. 12″ to 14″
d. 14″ to 18″

ASSIGNMENT SHEET 1

1. b	7. c
2. c	8. a
3. a	9. c
4. a	10. b
5. b	11. c
6. d	12. a
	13. d

JOB SHEET 1	APPLIED SKILLS	A 3

OBJECTIVE 5

Install drywall on a wooden frame.

EQUIPMENT AND SUPPLIES

- Safety goggles and hardhat
- Drywall hammer
- Steel tape
- Nail pouch
- Utility knife
- Drywall square
- Drywall (½" thickness)
- Nails
- Drywall lift
- Circle cutter
- Drywall or keyhole saw
- Drywall rasp
- Metal corners
- 2×4s for T braces
- Nails
- Screws and screwgun
- T-square

PROCEDURE

Functional Reading Skills
- Follow written instructions
- Interpret graphics and symbols

Math Application Skills
Use English and metric measures
Functional Math Skills
- Make measurements

For ceiling installation using screws. Yes No

NOTE: In the example ceiling drywall will be applied first, but before any drywall is applied, be sure that electrical, water, gas, heating, and air-conditioning rough-in have been completed, that the building code (rough in) inspection has been completed and approved, and that the exterior wall insulation has been installed.

1. Preparing for installation.

   a. Put on safety goggles and hard hat. ___ ___

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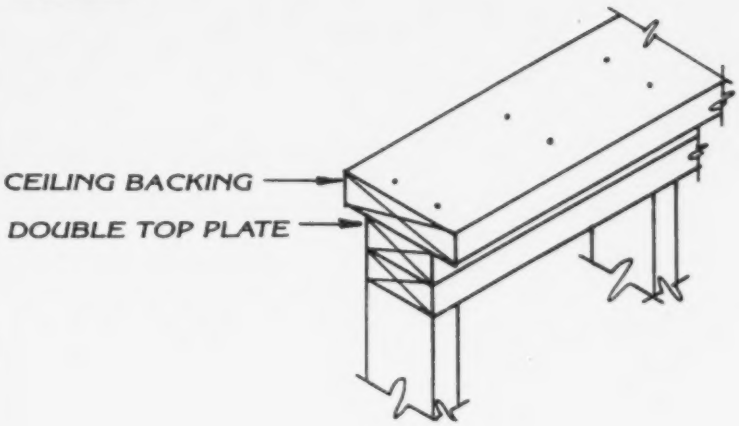
General Science Skills
- Use scientific instruments

Job Acquisition/ Development Skills
- Master specific job task/procedure
- Practice good work habits/attitudes

b. Install backing material along top plate if it has not already been installed. (Figure 2) ___ ___

FIGURE 2



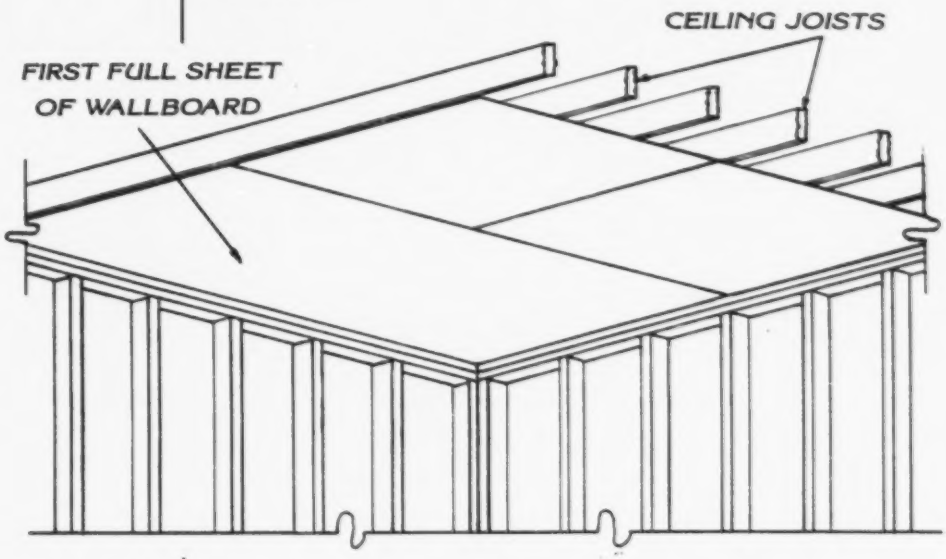
c. Measure 48¼ inches out at each end of the room and mark ceiling joists. Strike a chalk line *across* all joists at these marks. the ¼ inch allows for any variation in the wall framing. ___ ___

2. Install the first full sheet of drywall on ceiling.

a. Begin at one end of the room—measure the distance from the end wall to the center of that joist nearest but less than the length of the drywall (example: 8 feet). Subtract ¼ inch from this measurement (example: 7'-11¾"). ___ ___

	Yes	No
b. Mark and cut the drywall to the length determined in step "a" (example: 7'-11¾").	___	___
c. Install the first piece of drywall with the longest edge screwed to the joists at the 48¼" point and the end positioned on the center of a ceiling joist. (Figure 3)	___	___
NOTE: Use a "T" brace if necessary.		
3. Space the screws 12 inches apart when applying to ceilings and 16 inches apart for sidewalls.	___	___

FIGURE 3

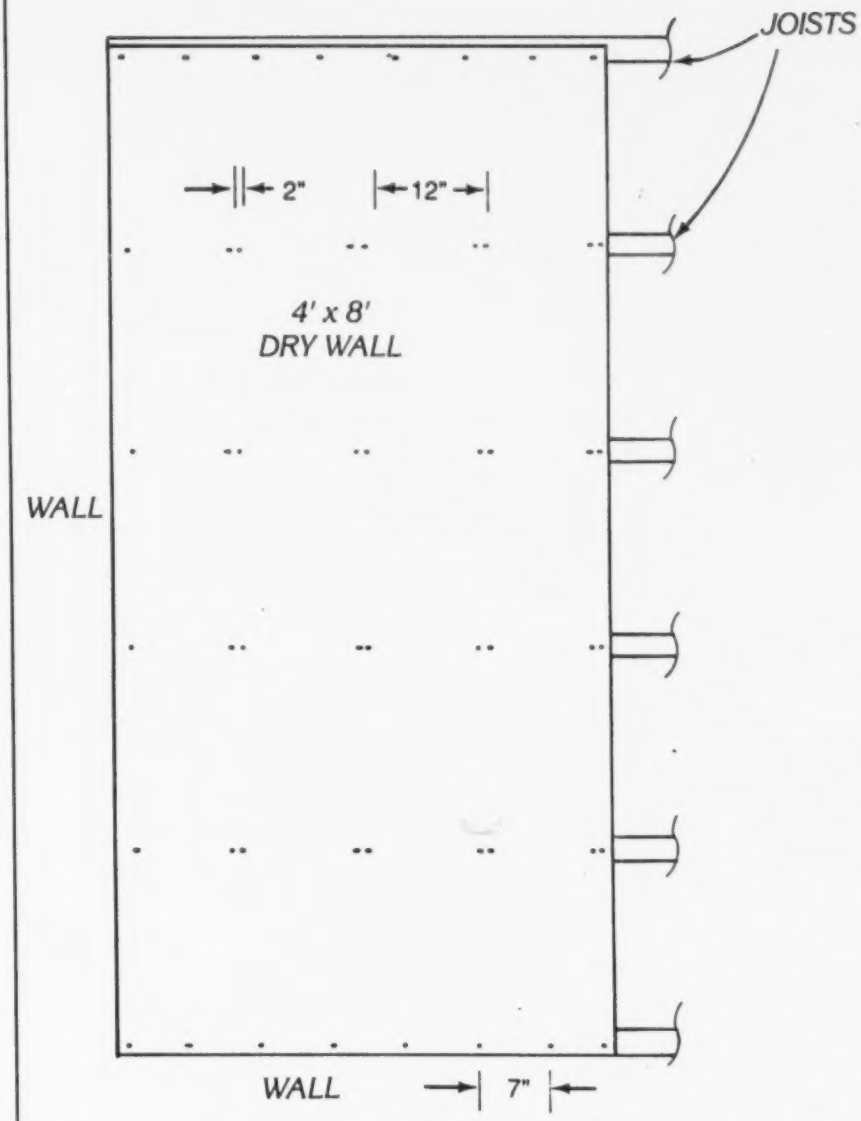


PROCEDURE

For nail installation

	Yes	No
1. Beginning at center of sheet and working outward, nail drywall by driving nails 16 inches apart and flush and then striking once more to make a dimple.	___	___
NOTE: DO NOT BREAK THE SURFACE PAPER WHEN NAILING.		
2. Double-nail sheet to joists by placing two nails 2 inches apart at 12-inch intervals. (Figure 4)	___	___
3. Drive one nail every 7 inches along drywall edges.	___	___

FIGURE 4



	Yes	No
4. Cut and install remaining ceiling drywall.		
a. Measure ceiling and then subtract ¼ inch from measured length.	___	___
NOTE: Breaks must fall on joist or nail backing.		
b. Mark measurements on finished face of drywall using a T square.	___	___
c. Hold straightedge on marks and use sharp knife to cut through face paper.	___	___
d. Break drywall at cut.	___	___
e. Use knife to cut paper on back side of drywall.	___	___
f. Use drywall rasp to smooth cut edge if necessary.	___	___
g. Nail drywall following procedure for installing first full sheet.	___	___
5. Cut openings for electrical boxes, switches, etc.		
NOTE: Openings should be no more than ⅛ inch larger than fixture.		
a. Measure distance of opening from the end and edge of drywall.	___	___
b. Mark measurement on face of drywall.	___	___

	Yes	No
c. Outline opening with pencil.	___	___
d. Cut out opening with drywall or keyhole saw.	___	___

PROCEDURE

For wall installation

1. Install first full sheet of drywall in top row.

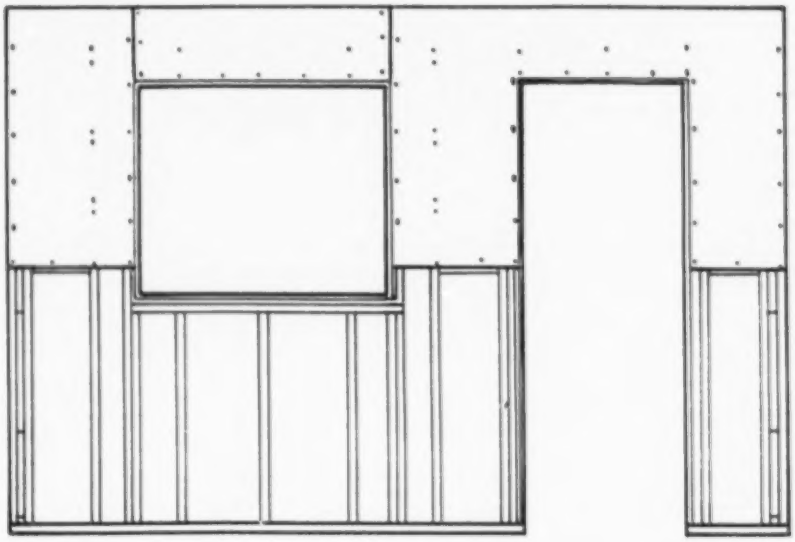
a. Beginning in a corner, hold full sheet of drywall tightly against ceiling drywall.	___	___
b. Beginning at center of sheet and working outward, nail drywall by driving nails flush and then striking once more to make a dimple.	___	___
c. Double-nail sheet along studs by placing two nails 2 inches apart at 12-inch intervals.	___	___
d. Drive one nail every 8 inches along drywall edges.	___	___

2. Cut and install remaining drywall in top row.

   NOTE: Whenever possible, drywall should be installed horizontally on walls. Plan installation so that vertical joints are in-line with door and window jambs whenever practical. See Figure 5.

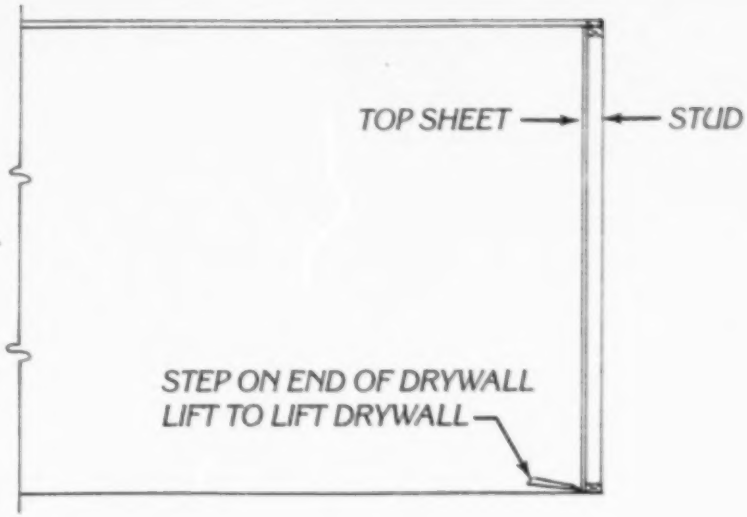
		Yes	No
a.	Measure the length of the wall and then subtract ¼ inch from measured length.	___	___
b.	Mark measurements on finished face of drywall.	___	___
	NOTE: Drywall over door and window openings may be put in position and cut in place.		
c.	Hold straightedge on marks and use a sharp knife to cut through face paper.	___	___
d.	Break drywall at cut.	___	___
e.	Use knife to cut paper on back side of drywall.	___	___
f.	Use drywall rasp tool to smooth cut edge if necessary.	___	___
g.	Nail drywall following procedures for installing first full sheet.	___	___

FIGURE 5



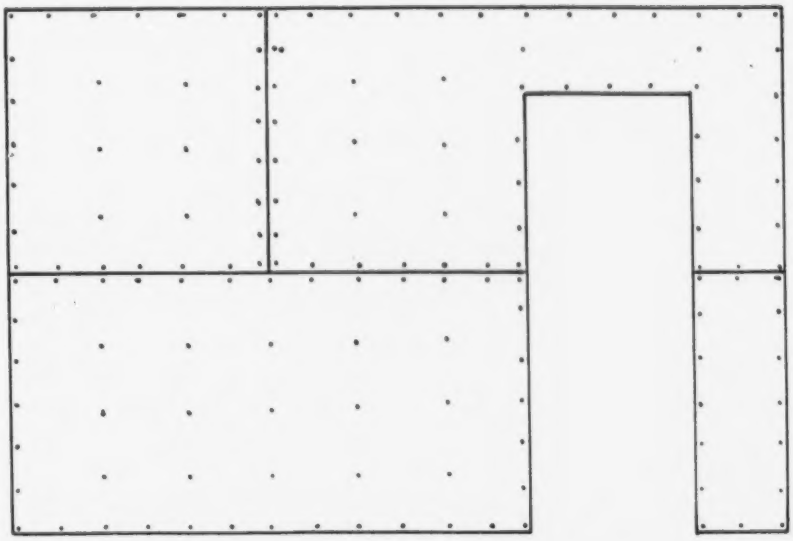
	Yes	No
3. Cut and install drywall in bottom row.		
a. Measure wall, mark measurements on drywall, and cut.	___	___
b. Position drywall with drywall lift to lift and hold sheet tight against sheet in top row. (Figure 6)	___	___

FIGURE 6



		Yes	No
c.	Nail drywall following procedures for installing first full sheet.	___	___
d.	Continue cutting and installing as required to complete drywall installation. (Figure 7)	___	___

FIGURE 7



	Yes	No
4. Install metal corner beads.		
NOTE: Metal corner beads are used only on outside corners.		
a. Measure length of outside corner.	___	___
b. Cut metal corner bead to length as needed.	___	___
c. Position metal corner bead over outside corner and nail corner bead every 5 inches on both edges through drywall into wood frame.	___	___
d. Clean up area and put away equipment and supplies.	___	___

(End of Job Sheet)

SKILL TEST RECORD

EVALUATOR'S COMMENTS

_____

_____

_____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Performance Evaluation Key.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:				
Fasteners at proper distance (½")	4	3	2	1
Joints tight (1/16")	4	3	2	1
Straight cuts (⅛")	4	3	2	1

EVALUATOR'S COMMENTS

_____

_____

_____

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the designated points in "Product Evaluation" and divide by the total number of criteria. Circle the rating on the "Performance Evaluation Key" below.

PERFORMANCE EVALUATION KEY

4 **Skilled** – Can perform job with no additional training

3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required

2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill

1 **Unskilled** – Is familiar with process, but is unable to perform job

JOB SHEET 2	APPLIED SKILLS	A 3

OBJECTIVE 6

Install drywall on a metal frame.

EQUIPMENT AND SUPPLIES

- Safety goggles and hardhat
- Steel tape
- Nail pouch
- Utility knife
- Drywall square
- Drywall (½" thickness)
- Drywall lift
- Circle cutter
- Drywall or keyhole saw
- Drywall rasp
- Metal corners
- Screws and screwgun

PROCEDURE

Functional Reading Skills
- Follow written instructions
- Interpret graphics and symbols

Math Application Skills
- Use English and metric measures

Functional Math Skills
- Make measurements

For ceiling installation. Yes No

NOTE: In this example, ceiling drywall will be applied first. Before any drywall is applied, be sure that electrical, water, gas, heating, and air-conditioning rough-in have been completed, that the building code (rough in) inspection has been completed and approved, and that the exterior wall insulation has been installed.

1. Put on safety goggles and hard hat. ___ ___

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General Science Skills
- Use scientific instruments

Job Acquisition/ Development Skills
- Master specific job task/procedure
- Practice good work habits/attitudes

	Yes	No
2. Lay out drywall		
a. Measure 48¼ inches out at each end of the room and mark ceiling joists. Strike a chalk line *across* all joists at these marks. The extra ¼ inch will allow for variations in the frame.	___	___
3. Install the first full sheet of ceiling drywall.		
a. Begin at one end of the room—measure the distance from the end wall to the center of that joist nearest, but less than the length of the drywall (example: 8 feet). Subtract ¼ inch from this measurement (example: 7'-11¾").	___	___
b. Mark the drywall to the length determined in step "a" above (example: 7'-11¾").	___	___
4. Cut drywall		
NOTE: Drywall joints must fall on the center of joists.		
a. Mark measurements on finished face of drywall.	___	___
b. Hold straightedge or T square on marks and use sharp knife to cut through face paper.	___	___
c. Break drywall at cut.	___	___

	Yes	No
d. Use knife to cut paper on back side of the drywall sheet.	___	___
e. Use drywall rasp to smooth edge if necessary.	___	___
5. Using a screwgun, install drywall screws.		
a. Space the screws 12″ apart.	___	___
b. Install the screws so that they create a slight dimple without breaking the surface of the drywall.	___	___
NOTE: If fire codes require double-layer drywall to be installed, consult your building plans for the correct drywall screw length and space requirements.		
6. Cut openings for fixtures, electrical boxes, switches, etc.	___	___
NOTE: Opening should be no more than ⅛ inch larger than fixture. The fixtures must be secured to the metal ceiling joists or hangers.		

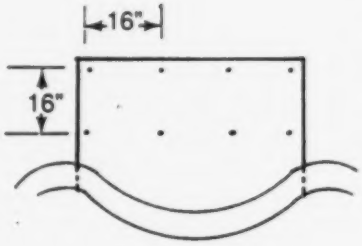
PROCEDURE

Wall Installation

1. Install first full sheet of drywall vertically.		
a. Beginning in a corner, hold full sheet of drywall tightly against corner and ceiling drywall. Use the drywall lift to hold the sheet in position.	___	___

	Yes	No
b. Place drywall screws 16″ apart.	___	___

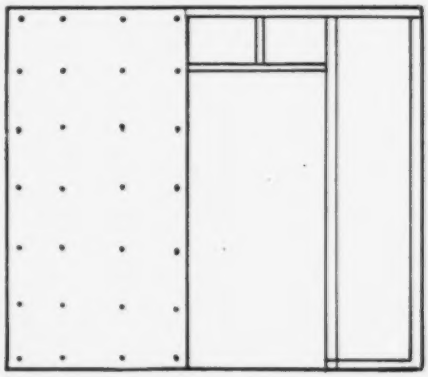
FIGURE 8



2. Cut and install remaining drywall.

a. Drywall joints should align with the door jambs.	___	___

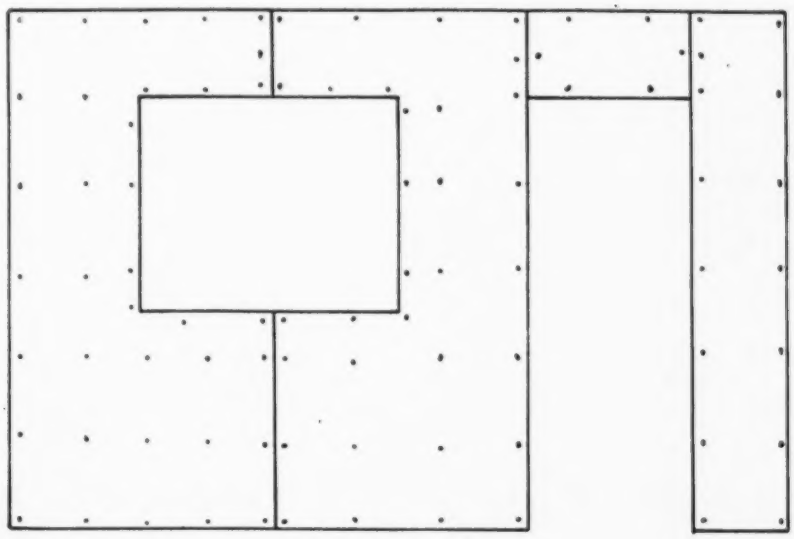
FIGURE 9



Yes No

b. Continue cutting and installing as required to complete drywall installation. (Figure 10) ___ ___

FIGURE 10



NOTE: Drywall over door and window openings may be put in position and cut in place.

PROCEDURE

For installing metal corner beads. Yes No

NOTE: Metal corner beads are used only on outside corners.

1. Measure length of outside corner. ___ ___
2. Cut metal corner bead to length as needed. ___ ___

	Yes	No
3. Position metal corner bead over outside corner and screw corner bead every 5 inches on both edges through drywall into frame.	___	___
4. Clean up area and put away equipment and supplies.	___	___

(End of Job Sheet)

SKILL TEST RECORD

EVALUATOR'S COMMENTS

_____

_____

_____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Performance Evaluation Key.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:

Fastener at proper distance (½")	4	3	2	1
Joints tight (1/16")	4	3	2	1
Straight cuts (⅛")	4	3	2	1
Control joints installed correctly (if needed)	4	3	2	1

EVALUATOR'S COMMENTS

_____

_____

_____

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the designated points in "Product Evaluation" and divide by the total number of criteria. Circle the rating on the "Performance Evaluation Key" below.

PERFORMANCE EVALUATION KEY

4 **Skilled** – Can perform job with no additional training
3 **Moderately Skilled** – Has performed job during training program; limited additional training may be required
2 **Limited Skill** – Has performed job during training program; additional training is required to develop skill
1 **Unskilled** – Is familiar with process, but is unable to perform job

JOB SHEET 3	APPLIED SKILLS	A 3

OBJECTIVE 7 — **Finish a drywall surface.**

EQUIPMENT AND SUPPLIES

- Safety goggles and hard hat
- Drywall hammer
- Taping knife
- 4-inch and 10-inch finishing knives
- Joint compound pan
- Joint tape
- Joint compound
- Corner beads (when appropriate)
- Nails for corner beads or crimping tool
- Sanding pole and sandpaper
- Proper respiratory protective equipment

PROCEDURE

Functional Reading Skills
- Follow written instructions
- Interpret graphics and symbols

Math Application Skills
- Use English and metric measures

Functional Math Skills
- Make measurements

		Yes	No
1.	Prepare the walls for bedding and taping		
a.	Put on safety goggles, hard hat, and required safety equipment.	___	___
b.	Install all corner beads and edge molds, nail or screw every 5 inches through the drywall and into the framing.	___	___
c.	Make a quick check to be sure all nails are set with proper dimples or screws are below the surface; correct as necessary.	___	___

Job Acquisition/
Development Skills
- Master specific job task/procedure
- Practice good work habits/attitudes

	Yes	No
2. Bed and tape joints		
a. Straight joints		
1) Fill depression area formed by tapered edges of drywall sheets with joint compound.	___	___
2) Center tape directly over joint and embed tape by pressing it firmly into compound with knife.	___	___
3) Smooth compound around and over tape to form level surface.	___	___
NOTE: Some compound should be squeezed from under the tape, but enough should remain to form a good bond.		
b. Inside-corner joints		
1) Fold joint tape down the middle.	___	___
2) Apply compound to both sides of corner.	___	___
3) Press creased tape into corner with knife.	___	___
4) Smooth out compound on both sides of corner.	___	___
3. Fill nail depressions.		
a. Apply compound.	___	___

	Yes	No
b. Draw knife across dimple with an even, smooth pressure.	___	___
c. Turn knife at a right angle to first application and draw it back across depression to smooth compound level with surface of drywall.	___	___
4. Apply compound over bead flange of corner beads and out from the bead 4 to 6 inches.	___	___
5. Finish joints, nail depressions, and corner beads.	___	___
a. Let dry at least 24 hours, lightly sand all areas where compound was applied. Wear respiratory protection.	___	___
NOTE: Do not damage the face of the drywall.		
b. Apply thin coat of compound over all areas previously coated, feathering out edges 1½ to 3 inches beyond edges of first coat.	___	___
c. Let compound dry for at least 24 hours, and then, after putting on respiratory protection, sand lightly.	___	___

		Yes	No
d.	Apply another coat of compound over all areas previously coated, feathering out edges to a total width of 14 to 18 inches.	___	___
e.	Let compound dry for at least 24 hours.	___	___
f.	After putting on respiratory protection, sand lightly.	___	___
	NOTE: Conditions such as temperature and humidity may make it necessary to apply additional coats for a smooth surface. Follow the procedures in steps 4 and 5 if additional coats are required.		
g.	Clean up area and put away equipment and supplies.	___	___

(End of Job Sheet)

SKILL TEST RECORD

EVALUATOR'S COMMENTS

_____

_____

_____

PRODUCT EVALUATION

Evaluator note: Rate the student on the following criteria by circling the appropriate numbers. Each criterion must receive a rating of "3" or higher to demonstrate student mastery. (See Performance Evaluation Key.) A student who is unable to demonstrate mastery should review the material and submit another product for evaluation.

Criteria:				
No exposed tape	4	3	2	1
Filled nail depressions	4	3	2	1
Smooth surfaces	4	3	2	1
Straight corners	4	3	2	1
Width of joint — 14″ to 18″	4	3	2	1
Respiratory protection worn	4	3	2	1

EVALUATOR'S COMMENTS

_____

_____

_____

AVERAGE RATING

Evaluator note: To obtain an average rating for the Competency Profile, total the designated points in "Product Evaluation" and divide by the total number of criteria. Circle the rating on the "Performance Evaluation Key" below.

PERFORMANCE EVALUATION KEY

4 **Skilled** Can perform job with no additional training
3 **Moderately Skilled** Has performed job during training program; limited additional training may be required
2 **Limited Skill** Has performed job during training program; additional training is required to develop skill
1 **Unskilled** Is familiar with process, but is unable to perform job

votech

WRITTEN TEST	APPLIED SKILLS	A 3

Name _____ Score _____

OBJECTIVE 1

Given a list of terms associated with drywall skills, match them to their correct definition. Write the letter that corresponds t the most correct answer.

_____ 1. What is the term that describes the place where the edges of two pieces of drywall meet?

a. Bedding seam
b. Joint
c. Seam
d. Dimple

_____ 2. To make by uniting two or more layers of material is to _____ them.

a. T-brace
b. laminate
c. joint
d. bond

_____ 3. A tool used to hold drywall in place against the ceiling joists is a

a. drywall lifter
b. T-jack
c. drywall hoist
d. T-brace

_____ 4. Which of the following terms describes a strip of wood nailed between structural members to provide a solid base for fastening drywall?

a. Backing
b. Plating
c. Strip bars
d. Nail strips

May be photocopied for student use.

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_____ 5. The finish coat of compound that covers all previous coats is known as

a. surface layer
b. finish coat
c. outer layer
d. topping

_____ 6. What is the term to describe a detailed plan, a design, or the arrangement of a project?

a. View
b. Scribe
c. Layout
d. Sketch

_____ 7. Openings that are made in drywall for convenience of access to other areas or for electrical outlets are known as

a. vent openings
b. blockouts
c. dimples
d. cutouts

_____ 8. Rigid sheathing material applied to interior finish walls and ceilings is called

a. plating
b. shiplap siding
c. drywall
d. backing

_____ 9. Paper tape used as reinforcement at drywall joints to keep surface from cracking is known as

a. perforated tape
b. bonding paper
c. joint sheets
d. fiber tape

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_____10. An adjustable tool used to make irregular parallel marks on an object for cutting is called a

a. projector
b. scribe
c. speed square
d. T-square

_____11. To spread joint compound or topping so that it tapers to a thin edge is known as a

a. rose-edge
b. T-topping
c. dimple layer
d. featheredge

OBJECTIVE 2

Given a list of methods, choose those used to apply drywall.

_____ 1. The following method(s) is (are) commonly used to apply drywall

a. nailing method
b. screw method
c. double nailing method
d. all the above

_____ 2. One method used to apply drywall is the

a. clamp method
b. "I" bolt method
c. screw method
d. loop and hook method

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OBJECTIVE 3

Choose the correct steps needed to prepare to install drywall.

_____ 1. Steps to prepare for drywall include

a. verify ceiling backing has been installed
b. carpets have been installed
c. cabinet doors have been removed
d. all the above steps must be complete

_____ 2. Before starting to install drywall, you must ensure that

a. all building and fire codes have or will be met
b. joint compound has been pre-mixed
c. the electrical rough-in has *not* been done
d. the plumbing rough-in has *not* been done

_____ 3. Drywall should *not* be installed until you verify that

a. the heating and air conditioning rough-in is complete
b. exterior wall insulation has been installed
c. walls and studs are straight
d. All the above

NOTE: Objectives 4-7 are evaluated on job sheets/assignment sheets in this unit. If you have not completed these components, see your instructor.

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WRITTEN TEST ANSWERS	APPLIED SKILLS		A 3
OBJECTIVE 1	1. b	7. d	
	2. b	8. c	
	3. d	9. a	
	4. a	10. b	
	5. d	11. d	
	6. c		
OBJECTIVE 2	1. d		
	2. c		
OBJECTIVE 3	1. a		
	2. a		
	3. d		

CIMC
TEST CODE SHEET

VOCATIONAL PROGRAM (BOOK TITLE) INTRODUCTION TO DRYWALL

UNIT NUMBER AND TITLE – A3 – APPLIED SKILLS

TOTAL NUMBER OF TEST QUESTIONS 20

TOTAL NUMBER OF BASIC SKILL QUESTIONS 6

OBJECTIVE NUMBER	TEST QUESTION NUMBER(S)	BASIC SKILL CODE(S)
1	**1, 3, 4, 6-8**	**S**
1	**2,5**	**X**
2	**1-5**	**X**
3	**1-3**	**X**
4	**1-4**	**X**

INTRODUCTION TO DRYWALL
COMPETENCY PROFILE

Student _____ Soc. Sec. No. ____ – ____ – ____
Last First MI

PROGRAM Grade 9 10 11 12 Adult SCHOOL

INSTRUCTOR SCHOOL ADDRESS PHONE

STUDENT'S HOME ADDRESS DATE OF BIRTH PHONE

STUDENT'S EMPLOYER ADDRESS PHONE

CONTACT IN CASE OF EMERGENCY PHONE

ADDRESS

OR

ADDRESS PHONE

The above information can be used for school records and/or to ensure safety of students. This confidential information is not to be released to employers or to the general public.

ON-THE-JOB TRAINING/WORK EXPERIENCE

DURATION OF EMPLOYMENT	JOB TITLE	EMPLOYER	SUPERVISOR'S NAME	ADDRESS OF EMPLOYER	PHONE

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Duplicate one copy for each student.

SPECIFIC JOB COMPETENCIES

DIRECTIONS: Evaluate the trainee using the rating scale below, and check the appropriate number to indicate the degree of competency. The numerical ratings of 4, 3, 2, 1, and 0 are not intended to represent the traditional school grading system of A, B, C, D, and F. The descriptions associated with each of the numbers focus on level of student performance for each of the tasks listed below.

Rating Scale:
- 4 — **Skilled** — can perform job independently with no additional training
- 3 — **Moderately Skilled** — has performed job independently during the training program; limited additional training may be required
- 2 — **Limited Practice** — has practiced job during training program; additional training is required to develop skill
- 1 — **Exposure Only** — general information provided with no practice time; close supervision needed and additional training required
- 0 — **No Exposure** — no information or practice provided during training program; complete training required

UNIT I

4	3	2	1	0	
					Fundamentals of Construction
					1. Given a list of terms associated with installing insulation, match them to their correct definitions
					2. Choose from alternatives, the benefits of use and the precautions in applying urethane foam insulation
					3. Select the correct precautions for installing insulation over a steel deck
					4. Identify the most commonly used methods to insulate ceilings, walls, and concrete slabs on grade
					5. Install a vapor barrier and insulation for a concrete slab on grade
					6. Install blanket insulation, with an integral vapor barrier, in walls
					7. _____

WRITTEN TEST SCORE _____

UNIT II

4	3	2	1	0	
					Drywall Tools
					1. Given a list of terms associated with drywall tools, match them to their correct definitions
					2. Given alternatives, choose the correct guidelines for the use and care of drywall tools
					3. Given a drawing, identify tools, equipment, and accessories used in drywall installation
					4. Given a drawing, identify common tools used to finish drywall
					5. _____

WRITTEN TEST SCORE _____

UNIT III

4	3	2	1	0	
					Drywall Material
					1. Given a list of terms associated with drywall materials, match them to their correct definitions
					2. Given a description, select the types of drywall
					3. Select from a list standard sizes of drywall
					4. Given alternatives, choose benefits of using drywall
					5. Given a drawing, identify hardware and fasteners used with drywall
					6. Estimate materials needed to drywall a structure
					7. _____

WRITTEN TEST SCORE _____

Use of This Document

Use of this document can be used to record information about the student and the skills mastered by the student. This information is useful in documenting student progress during the training program and to provide information about the student's qualifications to potential employers and for entry into advanced training programs. Instructors using AGC-CIMC instructional materials are authorized to reproduce this document as required for use in their training programs.

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INTRODUCTION TO DRYWALL

CIM

WRIT

READING SKILLS

UNITS OF INSTRUCTION	Reading Comprehension									Research and Reference							Functional Reading							Language		Composition							
	Gain factual information	Distinguish fact, opinion and inference	Recognize stereotyping and bias	Recognize propaganda	Analyze cause and effect	Draw conclusions	Make generalizations	React to written material	Apply word analysis techniques	Select useful resources	Locate resources	Find materials in library	Use standard references	Use in book reference tools	Use audiovisual media	Use computer data base	Use magazines and newspapers	Interpret forms and records	Follow written instructions	Interpret graphics and symbols	Use content area vocabulary	Interpret abbreviations/acronyms	Read aloud	Use standard grammar and correct spelling, punctuation, and capitalization	State ideas clearly	Use complete sentences	Develop preliminary outline	Use topic sentences	Use introductory/closing paragraphs	Compose reports	Compose essays	Proofread and edit	Construct graphics and symbols
Drywall Construction																																
Drywall Tools																																
Applied Skills													●						●	●												

C BASIC SKILLS DOCUMENTATION MATR

TING SKILLS

MATH SKILLS

Research					Functional Writing						Operation and Calculation										Math Application										Data Analysis and Display										
Take notes	Use notecards	Create bibliography	Use footnotes	Outline material	Complete forms and records	Write instructions	Write letters	Write job applications	Write resumes	Use word processing	Use computer graphics	Round off numbers	Estimate answers	Use scientific notations	Use exponential notations	Calculate with whole numbers	Calculate with fractions	Calculate with decimals	Convert whole numbers to fractions	Convert whole numbers to decimals	Solve numerical expressions	Solve formulae and equations	Obtain squares and square roots	Convert units of measure	Perform metric calculations	Solve word problems	Select/apply mathematical formula	Select/apply mathematical procedure	Use English and metric measures	Solve time/rate/distance problems	Solve ratio/proportion problems	Solve percent problems	Apply techniques of scaling	Apply algebra principles	Apply geometry principles	Apply trigonometry principles	Interpret charts and tables	Interpret graphs (type)	Collect /record data	Apply sampling techniques	Apply principles of probability	Construct charts and tables	Construct graphs	Calculate statistics	Interpret statistics	Interpret blueprints/plans	Make measurements
																●	●	●	●	●		●							●																		
																												●																		●

RIX

SCIENCE SKILLS

94-010739

Functional Math

- Make measurements
- Perform banking transactions
- Make change
- Solve practical problems
- Calculate gross earnings
- Solve income/expense problems
- Prepare a budget
- Calculate interest
- Solve interest problems
- Calculate sales tax
- Determine income tax
- Use calculator for computation
- Use computer for computation
- Use computer spreadsheets

General Science

- Apply computing skills
- Apply scientific method of inquiry
- Conduct experiments
- Investigate science ethics
- Investigate science history
- Investigate/apply economics in technology
- Use scientific instruments
- Investigate/apply technology
- Collect specimens

Life Science

- Identify/classify living organisms
- Investigate biological history of the earth
- Investigate food chains, webs, pyramids
- Investigate/apply principles of human development
- Investigate/apply principles of genetics/heredity
- Investigate/apply principles of anatomy/physiology
- Investigate health issues

Physical Science

- Analyze/classify matter
- Investigate forms/changes of matter
- Investigate forms/changes of energy
- Investigate/apply chemical properties
- Investigate/apply physical laws

Earth Science

- Investigate physical characteristics of the earth
- Investigate geological history of the earth
- Investigate physical forces acting on the earth
- Solve problems of longitude, latitude, and time zones
- Investigate conservation of physical resources
- Investigate conservation of living resources
- Investigate issues of environmental impact
- Apply science principles to environmental issues

● Make measurements
● Use scientific instruments

ORAL COMMUNICATION SKILLS

INTERPERSO

UNITS OF INSTRUCTION	Oral Presentation									Listening				Interactive Communication										General Relating								
	Make informative presentations	Make persuasive presentations	Present personal opinion/viewpoint	Use good speaking techniques	Select/use words effectively	Use effective body language	Present appropriate appearance	Integrate audio and/or visual materials in oral presentations	Adapt presentation to specific audience	Apply active listening skills	Distinguish fact, opinion, and inference	Draw conclusions/make generalizations	Analyze/identify point of view	Give/follow oral directions	Apply questioning techniques	Conduct/receive interviews	Analyze/apply nonverbal communication	Work effectively in a group	Communicate with clients/customers/patients	Communicate with co-workers	Communicate with supervisors	Communicate with professional colleagues/associates	Apply telephone etiquette	Investigate/apply communication process models	Analyze/apply nonverbal communication	Investigate/apply cross-cultural communication	Interact with co-workers	Interact with supervisors	Interact with clients/customers/patients	Interact with professionals/colleagues/associates	Interact with family/friends	Participate in group activities	Participate in industrial relations/functions
Drywall Material																																
Drywall Tools																																
Applied Skills																																
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Developer of the Nation's

SONAL OR RELATING SKILLS

CREATIVE THINKING/ PROBLEM SOLVING SKILLS

EMPL

			Teamwork/ Cooperation															Leadership/ Influence							Cognitive Activities																				Job Search Selection							
Participate in industrial relations/functions	Identify personal values/attitudes	Apply information to life experiences	Identify values/attitudes	Identify needs/drives	Select/apply appropriate behavior	Investigate/identify personal styles	Investigate/identify group/corporate climate	Give/receive feedback	Identify hidden purposes	Investigate/apply group dynamics	Control undesirable/inappropriate behavior	Resolve conflicts	Clarify goals/objectives	Devise "win/win" situations	Build consensus	Generate ideas	Present point of view	Analyze/apply leadership styles	Analyze/apply management styles	Obtain confidence of others	Develop esteem in self/others	Persuade others	Analyze/apply motivation techniques	Provide positive coaching	Collect/record information	Identify critical elements/issues	Define a problem	Identify underlying causes	Apply a problem-solving model	Analyze/synthesize information	Identify/analyze underlying assumptions	Draw conclusions	Predict results/outcomes	Identify/evaluate consequences	Identify/develop alternatives	Evaluate alternatives	Select an alternative	Devise a solution	Create a finished product	Apply intuitive/creative thinking processes	Transfer knowledge/training to new situations	Apply new technology	Develop an action plan	Evaluate results/outcomes	Analyze personal occupational aptitudes/preferences	Investigate employment prospects of a career field/occupation	Investigate training requirements for a career field/occupation	Investigate benefits of a career field/occupation	Compare/evaluate career options	Develop personal career path	Locate appropriate jobs	Analyze duties/requirements/benefits of [illegible]

's Best Competency-Based Instructional Systems for Vocational

EMPLOYABILITY SKILLS

SOCIAL STUDIES SKILLS

ch/ on				Job Aquisition/ Development														Information Analysis						Social Studies Application												Functional Social Studies															
			Compare/evaluate career options	Develop personal career path	Locate appropriate jobs	Analyze duties/requirements/benefits of specific job	Master specific job task/procedure	Fill in job-related applications	Write letter of application	Write personal resume	Interview for a job	Apply business etiquette	Practice good work habits/attitudes	Develop good personal presentation	Develop self-confidence/esteem	Develop effective leadership	Deal effectively with supervisors	Deal effectively with co-workers	Deal effectively with professional colleaques/associates	Deal effectively with customers/clients	Collect/record data	Interpret graphical information	Construct graphical information	Interpret maps/globes	Interpret statistical information	Analyze/interpret demographic information	Investigate/apply U.S. history	Investigate/apply world history	Investigate/apply U.S. geography	Investigate/apply world geography	Investigate/apply principles of government/politics	Investigate/apply principles of economics	Investigate/apply principles of ethics	Investigate/apply principles of psychology	Investigate/apply principles of sociology	Investigate/apply cross-cultural studies	Practice responsible personal economics	Prepare a personal budget	Use credit responsibly	Practice good work ethics	Participate in industrial relations	Interact with people of different races/cultures	Investigate/participate in government	Investigate/apply American legal practices	Select/use sources of information on current events	Analyze current events	Analyze consumer issues	Analyze social issues	Analyze conservation/ecology issues	Analyze social impact of science/technology	Analyze economic impact of science/technology
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